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I.—SOME ANTECEDENTS OF THE PHILOSOPHY
OF BERGSON.

THE CONCEPTION OF "REAL DURATION".

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THE primary and most characteristic part of M. Bergson's metaphysics may be described—by those who like to label ideas with the names of their historic originators—as resting upon a synthesis of two Cartesian propositions with one Kantian proposition. The Cartesian elements consist, first, in the setting-up of a fundamental antithesis between two kinds of being, "extended things" and consciousness, which are forthwith assumed to have no attributes, save that of possible existence, in common; and second, in the emphasis upon the superior certainty of the existence of consciousness. These two principles of the most influential French philosophy of the seventeenth century serve as more or less tacit presuppositions of the most influential French philosophy of the twentieth century; though from them the later metaphysician causes to sprout conclusions unimagined by his predecessor. That the categories applicable to space and spatial things are essentially alien to that existence which we call our inner life, and *vice versa*—this, throughout the greater part of Bergson's writings, is not so much argued for as taken for granted. And that the reality of the *moi qui pense* is the clear and ultimate truth, with the analysis of the meaning of which philosophy should take its start—this is the initial axiom of *L'Évolution Créatrice*, as it is less explicitly that of the *Essai sur les données immédiates de la con-*

science.¹ "The existence of which we are best assured,"—so run the familiar opening words of the former book—"and the one with which we are best acquainted is incontestably our own. Of all other things we have notions which may be considered external and superficial; but ourselves we know inwardly and profoundly."

Descartes, however, had, after all, relatively little to say about the *moi qui pense*. Psychological descriptions, it is true, he furnishes in abundance. But he makes no such attempt to formulate the one essential attribute of consciousness and to deduce methodically therefrom a metaphysics of inner experience, as he does to formulate the one essential attribute of the things "outside me," and to deduce therefrom a cosmology. It was precisely with this somewhat slighted Cartesian problem that Bergson began his own constructive efforts in metaphysics; he would set forth the immediate deliverances of consciousness about its own fundamental and generic nature. And the general outline of his answer to this question he found in a commonplace of the Kantian philosophy. I do not mean that his hitting upon it was conditioned upon Kant's having first propounded the idea; but it is, none the less, a familiar historical fact that Kant had already propounded it. *Time*, said the Critical Philosophy, is the essential attribute of our empirical subjective existence, the pure "form" of the inner sense, as space is of the external. But when this traditional observation, usually somewhat vaguely apprehended, was definitely combined with the two Cartesian propositions mentioned, it obviously generated a further problem, and in part tended to predetermine the solution. The problem certainly cannot be said to have been neglected by Kant, since the *Kritik der reinen Vernunft* is full of his struggles with it. But he scarcely disengaged it clearly from other issues, or answered it in a way to command general assent. The problem is, of course, that of determining, in turn, what are the attributes of time itself, as the form of inner experience; in Kantian terminology, it is the question how the "pure percept" of time stands related to "the categories of the understanding," especially the categories which seem most evidently pertinent to it—the categories of quantity—and how its relation to these can be radically differentiated from that of space. Precisely this, then, was Bergson's initial and decisive problem, stated in the language of the philosophies of an earlier age.

¹ The latter writing will hereafter be designed as *DI*; I quote from the second edition, 1898.

The answer¹ which Bergson reached is, of course, familiar to all readers of contemporary philosophy; but it is perhaps advisable to repeat here briefly the essentials of it. It declares that the categories of quantity and number, in any ordinary sense, are pertinent only to space and spatial things; and that time, and therefore consciousness in its true nature, is non-quantitative and without any relation to number. For, it is argued, we can think of the elements of a series or succession as constituting a numerical aggregate only if we represent them as co-existing; we can represent them as co-existing only if we picture them as juxtaposed in space; and consequently, to think of the moments of time as forming a series of distinct and numerable moments is to reduce the temporal to the spatial and to convert succession into simultaneity. In real duration the moments fuse, interpenetrate, in fact are "without reciprocal externality". But our imagination, and, indeed, our ordinary 'intellectual' processes of thought, are bound up with spatial imagery, given over to the habit of thinking in terms of number and quantity, and accustomed to deal with objects of thought conceived as 'outside of' one another. These processes, therefore, if left uncorrected, always misrepresent the nature of time, and, consequently, the nature of reality. The principal task of philosophy, then, is to provide the requisite correction of our ordinary notions of real duration.

Was, now, this account of the nature of time, and of the categories that are properly applicable to inner experience—an account which, on the face of it, has an undeniably paradoxical look—an innovation of M. Bergson's? I shall proceed to show that it was not; that, on the contrary, substantially the same answer to the same problem had been earlier developed, and developed as a deduction from Kant's doctrine, in the two influential French semi-Kantian schools of the nineteenth century: the school of Ravaissón and the school of Renouvier.

1. *Ravaissón's doctrine of time.* That Bergson's philosophy bears a close genealogical relation to that of F. Ravaissón-Mollien has been remarked by a number of his expositors; and some of the elements of the older man's doctrine which anticipated the philosophy of creative evolution have been expounded with generous eloquence by M. Bergson himself, in his memorial discourse before the *Académie des sciences morales et politiques*.² But the precise nature of the logical

¹ Formulated first and most fully in the second chapter of *DI*.

² *Séances et travaux de l'Académie des sciences morales et politiques*, vol. 161, 1904, pp. 673-708.

affinities and oppositions between the two systems has, so far as I know, never been closely analysed; and the relation between the two with respect to their doctrine of time has apparently not been noted at all.

It was not upon Bergson alone, among recent French thinkers, that Ravaission exercised a significant influence. To most of the men who began to write philosophy in France in the eighteen-seventies and eighties—and for some during the two preceding decades also—Ravaission's teaching was a potent formative force. This influence was of such a curiously underground, Arethusa-like sort, that the foreign student of French philosophy would be unlikely to suspect it, were it not for the testimony of some of those who experienced it. Ravaission wrote very little altogether, and almost nothing on philosophy after 1840, except in connexion with certain official reports which he was called upon to prepare. His most important original work, the *Essai sur l'habitude*, his *thèse de doctorat* of 1838, soon became out of print and comparatively inaccessible.¹ As an academic teacher Ravaission was active only for a few years. His influence was due to three circumstances: first, to the fact that nearly all of the few things he wrote—including his *Essai sur la métaphysique d'Aristote* (1837) and his *La Philosophie en France au 19^e siècle*, originally prepared for the exhibition of 1867—were, or enjoyed the credit of being, masterpieces; second, to the fact that, as president of the committee in charge of the competitive examinations for the *agrégation* in philosophy, he for many years determined the subjects of the theses of the candidates for this degree, and was judge of the theses produced; and finally, to the fact that the chair of philosophy in the *École normale supérieure* was occupied from 1864 to 1875 by an inspiring and persuasive teacher, M. Lachelier, who was an ardent admirer of Ravaission's philosophical methods, and a sharer of some of his doctrines and his enthusiasms. What Ravaission was to the young men who grew up at a time when French philosophy was truly being reborn, is indicated in an interesting article published by M. Lionel Dauriac in 1885:—

"About sixteen years ago the *Philosophie en France au 19^e siècle* was very much what the *exemplaria graeca* were to the studious youth of the time of Horace. He who was to be our judge, he captivated us by his 'aesthetic virtues,' and the magic of his style won us to his ideas. This enthusiasm was

¹ It was reprinted in the *Revue de Métaphysique et de Morale*, 1894. The essay is hereafter referred to in this paper as *EH*; and the page numbers are those of the volume in which the reprint appears.

almost universal, and it would be an error to imagine that the desire of candidates for success was alone the cause of it. All were eager to be praised by the examiner, not because of his functions, but because of what he was in himself. At that time M. Lachelier taught theoretic philosophy at the *École normale*; . . . and the two philosophers then seemed to be of the same school. . . . The influence of MM. Ravaission and Lachelier ruined, and ruined for ever, that of Victor Cousin. . . . For the first time since half a century, Descartes, Malebranche, Leibniz, Kant, were presented to us as models of the art of thinking, not as examples dangerous to follow. . . . The two classics admired above all were Leibniz and Kant.¹

Let us now examine the account of the attributes of time given by Ravaission in his *Essai sur l'habitude*. He maintains therein, in the first place, the four following propositions which, as we have seen, are fundamental to Bergson's theory of "real duration": (1) that to think of a quantity as made up of distinct elements, or to think of a number, is to represent the parts or units as co-existent; (2) that co-existence in turn, can be represented only in the form of spatial juxtaposition; (3) that, consequently, to think of anything as an "extensive," i.e., a divisible, quantity, is to think of it as spatial; (4) that "*tout ce qui est de l'espace est hors du temps.*" Ravaission's own expression of these propositions is as follows:—

"The understanding apprehends quantity only under the special and determining condition of the distinction of parts, i.e., only under the form of plurality in unity, of discrete quantity, of number. But the idea of the distinction of parts, in its turn, can be apprehended by the understanding only under the still more particular condition that the parts be separated by intervals. In other words, the understanding represents number only in the form of the plurality of the limits of a continuous quantity. Finally, *continuity can be apprehended by the understanding only under the form of coexistence.* But continuous co-existent quantity is extension. Thus *quantity is the logical, the scientific form of extension; and the understanding represents quantity only under the sensible form of extension,* in the intuition of space. . . . Nothing is distinctly intelligible to us except what we can picture in imagination; we have a distinct conception only of what we can outline before ourselves in an imaginary space." (*EH*, 11, 12; italics not in the original.)

Up to this point, the identity of Ravaission's ideas with Bergson's doctrine about the relation of the intuition of

¹ *Critique Philosophique*, 1885, I, 36.

space to the category of quantity, and about the essentiality of both to all distinct conception, is complete. But when we turn to the question about time, we find Ravaïsson beginning, indeed, in much the same manner as the later philosopher, but at a critical point giving what appears to be a different turn to the argument. A close scrutiny of this difference will, I think, be found instructive.

How, then, asks Ravaïsson, can I think the elements of a succession as a quantity, how can I represent them as a number?

"The parts come one after another, and I must bring them together. Now, the addition of part to part is successive; it implies time. But in time everything passes away, nothing abides. How can I measure this uninterrupted flux, this boundless diffusion of succession—unless by something which does *not* pass, but subsists and perdures? And what can this something be, if not my Self (*si ce n'est moi*)?"

It cannot, argues Ravaïsson, be space or anything in space, which constitutes this permanent in or behind time that makes the apprehension of time possible.

"For all that belongs to space is outside of time. In my Self is to be found the substance, at once in time and out of time, which is the measure of change as of permanence, the type of all identity."

In short, Ravaïsson has led us back to the Kantian Ego, to the "Synthetic Unity of Self-Consciousness"; and he has led us thereto, though at a strangely accelerated pace, over a familiar Kantian road. He himself appends to the passage quoted a reference to Kant, to show the source of his argument.

Now it will be observed that these remarks concerning time curiously ignore what Ravaïsson has been saying, on the same page, with respect to the idea of quantity. They imply, or at least they fail to deny, that the elements of a temporal succession can truly and without falsification be represented as a quantity or number. But if—as the preceding argument had maintained—extensive quantities, in the Kantian sense,¹ can be thought only as co-existent, and if the co-existent can be thought only as extensive—then, to think of the time of inner experience as an extensive quantity is precisely to represent the temporal as spatial, and the successive as co-existent. In other words, to bring real time—not the mathematician's abstraction, but the time that is the form of

¹ *Kr. d. r. V.*, A, 162: "By an extensive quantity I mean one in which the representation of the whole is made possible by the representation of its parts and is therefore necessarily preceded by it".

consciousness itself, the time that is *lived*—under the category of extensive quantity, is to *misrepresent* it. To this obvious consequence of his reasonings concerning the relation of space and quantity, Ravaission, in the *Essai sur l'habitude*, was not wholly blind; in certain passages, one finds him contrasting “the extensive unity of logical or mathematical forms,” under which science artificially represents existence, with “the intensive, the dynamic unity of reality”. But at best the inference is drawn only in a veiled manner, and in the discussion of the attributes of time, where it was of especial pertinency, it was not drawn by Ravaission at all. Bergson's *durée réelle* was generated simply by the drawing of this manifest consequence. If—as Bergson habitually assumes—what Ravaission said about the inter-relations of the notions of co-existence, space, quantity and number, is true, then assuredly time is no quantity in the ordinary sense, and its “parts” are not related to it or to one another after the manner of a numerical aggregate. Hence, the characteristic Bergsonian phraseology about the “indivisibility” of duration, the “interpenetration” of moments, the innocence of the elements of our temporal consciousness of all “reciprocal externality”.

But in avoiding the self-contradiction into which Ravaission fell in the passage from his explication of the notion of quantity to his explication of the notion of time, Bergson fell into another contradiction not less obvious. For, of course, a time without succession is no time; without a series of numerically separate moments, without “distinction of parts” and “reciprocal externality,” succession is inconceivable, and the term is indistinguishable from its opposite. So long, then, as Bergson adheres rigorously to the sort of phraseology I have quoted, and means anything definite by it, he obliterates the distinction between the temporal and the eternal, between change and immobility, between a sequence and a *totum simul*.¹ For it is only by the aid of the category of number that either time or anything else can be represented as anything but *mere* unity, a blank *Identität der Identität*. And this is precisely where M. Bergson comes out; or rather, it is one of the two conclusions to which he comes, since he contradicts this view only a little less often and less earnestly than he affirms it. For such an outcome, however, he had, once more, precedent in the metaphysics of Ravaission; he merely reaches, by following the path which Ravaission entered and then inadvertently abandoned,

¹This point has been argued by the writer at length in *The Philosophical Review*, May, 1912.

a point very close to that which Ravaïsson reached by his other road.

For, as we have seen, in his observations on the conditions of the possibility of the consciousness of time, Ravaïsson finds that such consciousness implies the time-transcendence of the Ego, although not in such a way as to take the Ego out of time altogether. The *Moi* to which he introduces us here is not the mere functional persistence of self-consciousness, which Kant talks about in the Deduction of the Categories and the Refutation of the Paralogisms of Rational Psychology. It has the qualities of the Kantian Noumenal Ego as well, that supersensible entity which is not more superior to the "form" of the outer than to that of the inner sense; and like the latter, it is not to be too exactingly subjected to the principle of contradiction. It is, as we have seen, a "*substance dans le temps à la fois et hors du temps*". In synthesising the successive moments of experience, "I pass continuously through" those moments, "from one extremity to the other"; yet this movement of the Self through time is without detriment to its supratemporal character. It is a "*mouvement que j'accomplice immobile du sein de mon identité*." But this, of course, is precisely the one sort of movement—namely, an unmoving movement—that can be supposed to occur in a non-quantitative and indivisible *durée réelle*. Ravaïsson's Ego, then, and Bergson's pure duration, are both supratemporal modes of existence, smacking not a little of the *Identitätsphilosophie* of Schelling; but they both are also meant to be temporal, and to reveal to us the very essence of our time-experience. And it is not least in the untroubled assumption that duration can have both characters at once, can be "indivisible and yet moving," that the philosophy of Bergson resembles that of the author of the *Essai sur l'habitude*, and of the Romantic metaphysicians by whom the latter had been influenced.

There is one passage in Bergson's first book in which his argument is plainly connected, not, as it usually is, with Ravaïsson's doctrine of the spatiality of all quantity, but with the reasoning about time which the latter writer, as we have seen, incongruously combines with that doctrine. Here the Synthetic Ego appears in Bergson's philosophy *in propria persona*. Bergson, in the passage in question,¹ is replying to the objection that we measure objective time, just as truly as we measure space; which would seem to imply that time like space is a divisible magnitude. If duration cannot be measured, what is it that is measured by the swing of a

¹ *DI*, 81.

pendulum? Bergson answers that strictly speaking there is no such thing as succession, and consequently no such thing as time, in objective space, considered apart from the Ego. "Outside of me, in space, there never exists but one position of the pendulum; for of its past positions nothing remains. But within me, in space, a process of organisation or reciprocal penetration of facts of consciousness goes on, and this it is that constitutes real duration. It is because I perdure in this way, that I am able to represent the past oscillations of the pendulum at the same moment in which I perceive its present movement. But suppress for an instant the Ego which thinks (*le moi qui pense*) these so-called successive oscillations: then there will never exist more than a single oscillation, and consequently there will be no duration." This reversion to the Kantian conception of the time-synthetising Ego, in a form of that conception which is but a slight elaboration of that quoted from Ravaission, is the more interesting in Bergson because it brings out with especial vividness the congenital doubleness of the nature of his "real duration". This argument manifestly declares that the Ego which thinks these successive moments distinguishes them even while persisting through them and transcending them. But on the other hand, of course, we are reminded on the same page that time is indivisible and without number, *sans moments extérieurs les uns aux autres*. The supratemporal character of the Kantian Ego did not, by first intention, imply any such indivisibility. It was often interpreted as meaning that the Ego was not "in" time; but it did not deny that time, with its distinctions of before and after, was in the Ego. It was set up precisely as a means of accounting for the possibility of the experience of these distinctions. When, then, Bergson not only adopts Ravaission's doctrine of the relation of the ideas of quantity and space, but also his entirely distinct Kantian doctrine of the conditions of the possibility of time-perception, he imports an especially glaring incongruity into his system. Yet it is true that the Kantian Ego historically tended not merely to transcend, but also to "transmute" and "suppress," the distinctions and antitheses of the temporal world; and in so far as Bergson's *durée réelle* does the same it is but a Romantic form of the Kantian Ego *redivivus*.

2. *The Doctrine of Time of Dauriac and Noel.*—Among some of the disciples of Renouvier in the neo-criticist school there is to be found a still closer approximation to Bergson's fundamental arguments and his principal conclusion in his *Essai* of 1889. It is possible that this similarity of doctrine (upon the one point) may be due to the fact that these younger

neo-critics, like Bergson, had been consciously or unconsciously influenced by the reasonings which we have seen expressed by Ravaissón. But in any case, such conclusions were a natural (though by no means an inevitable) result of the Kantian presuppositions of the school, and of that analytic study of the inter-relations of the "categories" which Renouvier had begun in his *Essais de critique générale*.¹

In the course of such analyses the question was bound to come up for definite consideration: Precisely in what logical terms are the ideas of space and of time to be differentiated, and, above all, what is the relation of the category of quantity to the forms of the outer and the inner sense respectively? To this question M. Lionel Dauriac addressed himself in an article "On the Notion of Number" in *La Critique Philosophique*, 1882; he gave the question the somewhat picturesque form of an unreal hypothetical case. Suppose there were (as, upon neo-criticist principles, there conceivably might be) a mind destitute of outer sensibility, an *esprit pur affranchi de toute relation avec l'espace, soumis à la seule forme du temps*. Could such a purely temporal and non-spatial consciousness have any ideas of number and extensive quantity at all? Would a mind furnished only with temporal experiences be capable of even the most rudimentary notions of mathematics? These questions Dauriac answered with a decided negative. And in the arguments by which he supported his answer Dauriac expressed certain of the characteristic premises upon which Bergson based his denial of numerical and quantitative attributes to the "real duration" of inner experience.

Dauriac's article is so little known, and relatively so inaccessible, that I think it worth while to translate without much omission a rather long passage from it:—

"Phenomena are of two sorts. One sort, successive and unextended, are free from the spatial form; the other, successive and extended, are subject to the law of spatiality. . . . Quantities are either extensive or intensive. In which form is the intervention of the idea of quantity most efficacious? that is what we wish to know. Now, that a state of feeling (*passion*) may vary in *degree* is undeniable; but to know that it has increased in intensity is not equivalent to knowing by how many degrees the intensity has been increased. . . . Here is a limit which the mathematical sciences cannot cross. . . . Consequently,—subject to possible correction by

¹The similarities set forth at large in what follows have previously been briefly referred to in a footnote to an article by the present writer in *The Philosophical Review*, September, 1912.

the future progress of psychophysics—we shall persist in regarding *psychic facts as non-extensive quantities*. And from this alone we ought to conclude that they are less capable than others of aiding the mind in the organisation of the science of numbers. . . . In the order of external realities, I prolong, for example, a given line. This line is everywhere homogeneous with itself, its parts remain, if I may so express it, outside of one another. *In the subjective (psychique) order it is not so; and here, as I think, lies the essential difference between addition of intensity and extensive addition.* *In the increase of intensity the quantities which are added do not remain outside of one another.* When an emotion increases, I cannot isolate in my mind the quantity which constitutes the increase from the quantity which (according to the psychophysicists) would represent the immediately anterior state. . . . [In this and other cases which are instanced] I do not perceive the two states of consciousness as added to one another, but as merged (*fondus*) one in the other. There is here no extension of a homogeneous quantity, but a fusion, *interpenetration*, of two heterogeneous qualities. To speak strictly, the notion of quantity whether discrete or continuous cannot be applied to facts of the psychic order, in the sense ordinarily attached to these expressions. One may, therefore, admit that a mind subject only to the form of time, and innocent of all relation, with space, could not conceive of arithmetical number as the human understanding conceives of it,—as Pythagoras conceived of it. The Pythagoreans were wont to think of number as something apart from space and sensible things. But it was to sensible things that they had first gone to find it; it was by dismembering the *external reality* that they discovered that which they looked upon as the first principle."¹

The similarity of this to the underlying arguments of Bergson's doctrine, and especially to the reasoning of the first chapter of *DI*, is of the closest. That chapter, too, constitutes an attack upon "the thesis of the psychophysicists" that one state may be said to be a definite number of times more intense than another. It, too, proceeds to the criticism of this thesis by means of analysis of what really occurs in so-called cases of the "augmentation" or "diminution" of a feeling or emotion. It, too, as a result of this analysis arrives at the conclusion that these psychic states are not magnitudes which can be compared as "greater" and "less" and that what is ordinarily called an increase in intensity is not a quantitative addition of homogeneous units,

¹ *La Critique Philosophique*, 1882, II., 322-324; italics not in the original.

but a qualitative progression. Moreover, what seems to me a vagueness or a confusion in Dauriac's argument appears in the form of an illicit transition in Bergson's. Even if one admit, with both, that the difference in feeling-content between moment *A* and moment *B* is not merely the difference between so much of a given kind of thing and more of the same kind of thing, it does not follow from this admission that *A* and *B* as *individual existences* are not temporally external to one another. It does not follow, even if we admit that the intensity which exists at moment *B* "contains" the intensity which existed at moment *A*, but contains it in some non-quantitative manner, as a "fusion" or "interpenetration". For the relation of the magnitude or quality of the content of *A* to the magnitude or quality of the content of *B* is entirely different from the relation of the existential *date* of *A* to that of *B*. Few distinctions are more obvious to common sense than this. But in Dauriac's paper the distinction was apparently disregarded; if it had not been disregarded, there would have been no inference possible from the conclusion that intensities do not differ quantitatively to the generalisation that the category of quantity is not properly applicable to psychic states at all. There would still have remained precisely the *numerical character of the time-sequence itself*, the enumeration of the changes which the *esprit pur*, the purely temporal experienter, is supposed to undergo. Without such a consciousness of sequence and of change of content, the *esprit pur* could not possess even so much as a temporal experience, but with it he was already furnished with the idea of plurality and thus with the rudiments of mathematical thought. This remark was promptly made by Pillon, in a criticism of Dauriac's argument; though the rest of the thesis of the non-quantitative nature of mental states Pillon adopted and emphasised:—

"For my part, I strongly incline to think that such terms as degree, quantity, even magnitude, when applied to sensations, . . . feelings, . . . emotions, . . . and the like, are purely metaphorical. It is certain that they cannot be taken in any exact sense, which would be a mathematical sense. . . . I incline very strongly to think that the so-called degrees or quantities of a given sensation or feeling are merely specific states of consciousness which resemble or differ from one another."

This thesis Pillon supported by the same (fairly obvious) distinction used later by Bergson¹ to the same end: the external causes or stimuli of our mental states differ quanti-

¹ *DI*, 3-6.

tatively, and by a confusion of ideas, we transfer the attributes of the causes to the effects. But when this distinction is observed, "when I compare the two sensations entirely without regard to their physical antecedents, I only discover resemblance and difference; I do *not* discover any quantitative relation, nor, consequently, any positive or intelligible relation of magnitude".¹

Now a habitual disregard of the distinction between character of content and date of existence is of the essence of Bergson's mode of argument, also. It is only because of it that the reasoning of the first chapter of *DI* appears to him—as it clearly does appear—to tend to the same conclusions as the reasoning of the second chapter. He constantly speaks as if a proof that the contents and characteristics of successive *moments* of experience "interpenetrate" one another, were the same as a proof that the *moments* interpenetrate, and so constitute "a succession without distinction". He repeatedly, in short, passes from the premiss in which he was anticipated by Dauriac—that psychic states, especially of the affective sort, cannot be regarded simply as multiples of homogeneous units, to the excessive generalisation in which he was anticipated by Dauriac—that "psychic states are without quantity or number". Finally, it will be remembered that Bergson is also fond of putting his doctrine in the form of the same imaginary case of an *esprit pur*. *Un moi ignorant de l'espace*, he observes, would have in its experience no possible source of the idea of plurality (*DL*, 92). We can imagine a mind which had the intuition only of time; it is precisely such a mind which would infallibly know duration as it is, as a succession without distinction free from the falsification which the notion ordinarily receives from our space-infected imagery.²

Dauriac's essay gave the start to a discussion which was carried on briskly through several volumes of *La Critique Philosophique*; and the doctrine of the essay was supported and somewhat further elaborated by another writer of the neo-criticist circle, M. G. Noel, in 1883. In his article, the argumentation of the second chapter of Bergson's *Essai* of

¹ *Critique Philosophique*, 1882, I. 383-384.

² Upon the principle *litera scripta manet*, M. Dauriac, in reply to an inquiry from the writer, has been good enough to offer no objection to this partial republication of a half-forgotten work of his youth; and he writes that he thinks others can judge more objectively than he concerning its logical affinities and historical relations. He adds, however, that while he considers the conception of "creative evolution" an extraordinarily fruitful one, he would not wish to be regarded—now, at all events,—as subscribing to M. Bergson's account of "real duration".

1889 is as clearly foreshadowed as that of the first is in the article of Dauriac; and the characteristic Bergsonian inference is plainly though somewhat waveringly, drawn. I cite enough to exhibit the principal similarities. "When we count (*nombrons*) a series of successive phenomena, we regard the order of their succession as indifferent. Though they are given one after the other, we deal with them *en bloc*, we think them as simultaneous. Otherwise how would it be possible for them to constitute a number? The series, merely as such, is no number. . . . But in order [thus] to impose upon the terms of a series of events a *fictitious simultaneity* it is necessary for us to possess already the concept of co-existence. This concept, an integral element of that of number, is bound up with the intuition of space, just as the concept of succession is bound up with the intuition of time. The former connexion is perhaps less obvious than the latter. Two phenomena may be simultaneous without being juxtaposed in space. For example, an odour and a sound seem to be capable of affecting us at once, without our localising either of them. But it is at least doubtful whether these seeming cases of co-existence are not rather cases of rapid succession. In any event, they can occur only where the two phenomena are heterogeneous. Two homogeneous sensations, if not localised, are indistinguishable. But, now, in the case of number as such, homogeneity of the component units is essential. The co-existence of these units can, accordingly, be given originally only in space (*dans le lieu*)."

Noel continues:—

"The intuition of space is so far from being of no use in the elaboration of the concept of number that one may define space as the condition under which we represent numerical diversity as such. . . . Thus the notion of number is possible only to a mind endowed with both forms of sensibility at once. . . . The elaboration of the concept of number consists precisely in the alternating movement by which the mind brings the content of one of these forms under the other form."¹

M. Noel, it is true, made a distinction which Bergson does not make. He admitted, what one would, indeed, suppose to be sufficiently obvious, that, since "all psychic existence implies change, a constant passing from one state to another," this "succession of distinct states constitutes a numerable plurality". Bergson on every page admits this by implication; but he does not often say it in plain terms, since to do so would be formally to contradict the doctrine of

¹ *Critique Philosophique*, 1883, I., 33-36.

non-quantitative duration. The admission seems also to conflict with the expressions already quoted from Noel; but he seeks to escape the self-contradiction by his *distinguo*. True, "the mind reduced to the purely temporal form contains number. But this does not appear . . . sufficient to settle the question. One would need, it seems to me, to prove, over and above this, that the mind could actually derive the notion of number from the succession of its inner states. Number exists in the mind; but it does not follow that it would exist for the mind." In other words, Noel held—what Bergson constantly denies, but as constantly takes for granted—that inner duration is in *fact* a numerical succession; but he held that this could not become a fact of consciousness until the temporal had been represented as spatial and the successive as co-existent. But by this process, as he too—though somewhat incongruously—insisted, the real nature of that duration is essentially misrepresented, is translated into a form alien to its essence.

The views of Dauriac and of Noel concerning the logical relations of time, space, quantity and number were not adopted by the older leaders of neo-criticism. Renouvier, in a reply to Dauriac's article, refused to admit that a purely temporal consciousness "would contain no idea of arithmetical number". "I see," he wrote, "nothing to prevent a mind of the sort defined from counting its own sensations or acts, or from applying to them the notions of unity . . . and number from which arithmetic springs. Such a mind would not measure time in our fashion, in terms of extension and movement; it would probably not imagine it as *continuous*; but it is precisely on that account that it would try to measure time in a *discrete* fashion, by the number of its homogeneous psychic contents, assumed to be of equal duration. And for just this reason *arithmetical number* would be all the more indispensable to a mind of this sort." M. Pillon, also, with characteristic learning and abundance, controverted the reasonings of Dauriac and Noel in a long series of articles.

But it is of interest to note that all four of the neo-criticist writers who concerned themselves with this problem during the eighteen-eighties agreed at least in emphasising two contentions. They all joined in attacking what they described as "the doctrine of the psycho-physicists" that a "mathematical psychology" is possible. And they all held that the nature of the real succession and duration which constitutes the form of inner experience has been profoundly falsified through the transference to it of the attributes of the "form" of outer sensibility, i.e., of extension. For Renou-

vier¹ and for Pillon² this falsification consisted merely in the representation of a discrete magnitude as a continuum; for Dauriac and, somewhat less unequivocally, for Noel, it consisted in the representation of psychic facts, in themselves essentially alien to numerical and quantitative determination, under the forms of quantity and number. Bergson may, then, be said to have been anticipated by the whole neo-criticist school in a preoccupation with the problem of sharply discriminating the spatial from the temporal categories, and in the general idea that our ordinary concept of time, and therefore our ordinary way of thinking about the nature of inner experience, have been perverted through the misapplication of the spatial categories to temporal realities.

I do not, of course, wish by all this to imply any reflexion upon Bergson's originality as a thinker. He may very well have arrived at his conclusions independently. That is a question of chiefly biographical interest, upon which he alone can speak with authority. But aside from any such question, there remain certain definite facts, which the future historian of philosophy ought to bear in mind. These facts it may be well now briefly to recapitulate, for the reader's convenience. Bergson's first, fundamental, and most frequently reiterated metaphysical contention may be summed up in these statements: (1) the primary and most certain reality is of the sort that we best know inwardly, *i.e.*, our own inner, conscious existence; (2) this existence is essentially temporal—it is a process of absolute becoming; (3) the great task of contemporary philosophy is therefore that of determining the nature of this "real" time of inner experience; (4) its nature is habitually misrepresented by our ordinary thought, owing to our habit of thinking of time under the form of space; (5) when this misrepresentation is corrected, it turns out that real time is an existence of which quantitative and numerical attributes cannot be predicated and to which all concepts and presuppositions of mathematical thought are inapplicable. Of these five propositions the first four were held generally by the neo-criticist school, and the third and fourth were especially prominent in neo-criticist writings during the de-

¹ Cf. the passage from his criticism of Dauriac, already cited.

² Cf. *Critique Philosophique*, 1883, II., 20: "L'intuition extérieure tend . . . à se substituer à tous; elle en fausse l'idée par cette substitution; mais elle en est parfaitement discernable et séparable. . . . Tout ce qu'on peut accorder, c'est qu'elle tient au rapport de succession par une adhérence un peu plus forte et moins facile à rompre." The relation of this aspect of Pillon's doctrine to Bergson's has recently been discussed at length by the writer elsewhere (*Philos. Rev.*, Sept., 1912), and is therefore merely touched upon here.

cade preceding the publication of Bergson's first book. In this school, all four of these doctrines were in fact, and avowedly, developed from certain Kantian principles.

The fifth proposition was of less general acceptance; but it had been enunciated by Dauriac and, with some inconsistencies, by Noel. This proposition with Bergson rested chiefly upon three supports. (a) The first was the psychological observation that mental states, notably those of the affective sort, cannot be compared as homogeneous quantities, but only as qualities; and, in particular, that this is true even in those cases in which we are accustomed to speak of the "increase" or "decrease" of intensity of a given feeling. This observation was converted by Bergson into the belief that psychic states "indivisibly interpenetrate" one another; and this in turn, by a confusion of ideas, was transferred from the relations between the content-characteristics of two moments of consciousness to the relations between the existential dates of the moments themselves. But the same observation had previously been made by Dauriac; it had been by him similarly converted into the notion of the "interpenetration of psychic states"; and, by the same confusion of ideas, had been transferred from its original sphere of application to that of the time-relations between the moments of inner experience. (b) The second support of the fifth proposition with Bergson is that view about the logical relations between the ideas of number, co-existence and spatial extension which has been more than once summarised in this paper. But this view had been expressed in 1838 by Ravaïsson, though its full implications had not been drawn out by him; and it had been fully and clearly expressed by Noel in 1883. (c) The third support of Bergson's principal doctrine about duration lies in the belief that it alone enables us to escape the paradoxes of the continuum while at the same time maintaining the irreducible "reality" of time. In the importance which he attaches to these paradoxes Bergson is once more upon neo-criticist ground; but in the precise way in which he uses them—which I have recently tried to show to be a confused and unconvincing way—he is, so far as I know, without precursors.¹

If it should happen to be the case that M. Bergson was directly influenced towards the acceptance of the fifth proposition by the arguments and example of those who anticipated him in it, I should not regard the fact as a detraction from his merit as a philosopher, but rather as a partial ex-

¹ *Philos. Rev.*, May, 1912.

culpation. For, as I have sufficiently intimated, it seems to me to be a very strange doctrine, resting upon premisses that are paralogisms. But the ideas involved in it may be said to have been "in the air" in French philosophy at the time when Bergson was framing a system; so that they may, to one living in that atmosphere, not unnaturally have seemed less odd and paradoxical than they in fact are. All philosophers at all times have been more or less the victims of current tendencies and current confusions.

Yet upon one point I think some complaint of Bergson's philosophical procedure is not unjustified. Philosophers, not less than natural scientists, are under some obligation to profit by, and to build definitely upon, the labours of their predecessors. Now, the essential assumptions and reasonings of the first two chapters of Bergson's first book had been patiently and searchingly criticised by Pillon half a dozen years before the book was written. To that proleptic criticism of the logical bases of his doctrine of time, Bergson seems to me to have given no serious consideration. He had, as he tells us, before the publication, though after the completion, of the volume, become acquainted with this "remarkable refutation of an interesting article of M. Noel's on the solidarity of the notions of number and space".¹ But he finds in it nothing which leads him to modify his position, since Pillon failed to make "the fundamental distinction between time as quality and time as quantity, between the multiplicity of juxtaposition and that of mutual penetration". If this means merely that Pillon regarded these distinctions as inadmissible, it is merely another way of saying that Pillon's view is not in accord with Bergson's. If it means, as the reader naturally takes it to mean, that Pillon was unfamiliar with the distinctions and neglected to discuss them, it conveys a complete misapprehension of the facts. The doctrine that mental contents differ only qualitatively, and not quantitatively, was not only known to Pillon, but had been accepted by him and, as we have seen, defended by him on grounds similar to Bergson's. Dauriac's application of this doctrine to the time-relations of mental states was equally well known to Pillon, but had been explicitly rejected by him for reasons set forth definitely and at length, and briefly recapitulated as follows:—

"I have replied to M. Dauriac's reasoning by showing that if mental phenomena are incapable of being measured, they are *not* incapable of being counted (*supputation*), and that consequently the idea of number could arise in a *pur esprit*

¹ *DI*, 57 n.

independently of any *measure* of time as well as any measure of intensive quantities".¹

I cannot, of course, take the space to summarise all of Pillon's discussion of the ideas shortly afterwards resuscitated by Bergson; but I think it no exaggeration to say that every essential point of the later writer's reasoning about time had been carefully analysed and lucidly refuted by the earlier one.

On the other hand, the later writer seems to have given a consideration that was by no means careful to this criticism. He observes, for example, that "without this distinction (between *le temps qualité* and *le temps quantité*), which is the principal subject of our second chapter, one might maintain, with M. Pillon, that the relation of co-existence suffices for the construction of number." This, however, was not at all what Pillon had maintained. His real contention² was that the experience by any mind of the relation of *succession* suffices for the construction of the idea of number; and that, on the other hand, no really temporal experience could conceivably be had by any mind which did not distinguish at least two successive states, or, therefore, by any mind which lacked the rudiments of the idea of number. Consequently, the dozen lines which Bergson thereupon devotes to a reply to Pillon's anticipatory criticism are wholly destitute of pertinency to that criticism. That, neither before the publication of his first book nor at any subsequent time, has he weighed, and given reasons for rejecting, the distinctions and arguments of his predecessor, must, I think, be regarded as a serious omission.

Bergson's system is, of course, compounded of many elements, of unequal degrees of value and of novelty. In a single paper I have found space for the consideration only of the first and most fundamental one. On another occasion I hope to present some inquiries into the antecedents and historical relations of M. Bergson's theory of creative evolutions; of his identification of consciousness with memory; of his doctrine that 'the intellect' is exclusively an instrument of action, and incapable of exhibiting to us the nature of reality; and of the species of mysticism which is associated with the latter doctrine.

¹ *Critique philosophique*, 1882, I., 384; also 1883, I., 164.

² *Critique philosophique*, 1883, I., 391, 395 et *passim*.

II.—LIFE AND LOGIC.

BY H. WILDON CARR.

MR. BERNARD BOSANQUET in his Gifford Lectures, *The Principle of Individuality and Value*, has criticised the two fundamental doctrines of M. Bergson's philosophy. The theory of life he declares to be a misinterpretation of the demand for creative initiative, and the theory of intellect, a failure to appreciate the true nature of logical process. Mr. Bosanquet himself holds that not life but "logic, or the spirit of totality, is the clue to reality, value, and freedom"; and that "creative initiative is obviously, under the form of change, what stability and self-maintenance are under the form of duration" (p. 23). And further, Mr. Bosanquet denies that in the theory of the Absolute we are presented with a reality in which *tout est donné*, in which therefore there is no place for initiative, freedom or creation. I propose to examine first, M. Bergson's theory of the nature of the indeterminism of life, and I shall try to show that Mr. Bosanquet's criticism, at least in one important point, rests on a misinterpretation. Secondly, I shall try to show that M. Bergson's account of logical process follows from his theory of the intellect, and that therefore the opposition between his account and Mr. Bosanquet's is not a disagreement of fact but of interpretation. And finally, on the question of the nature of the reality of the Absolute I shall try to show that Mr. Bosanquet's argument, effective as it is against mechanical determinism, yet fails to prove that logic is "creative," in any real and ultimate sense of the term.

In defending M. Bergson's theory, my aim will be rather to compare his principle with the rival principle of Absolutism than to meet Mr. Bosanquet's criticism with direct argument. And my reason for this is that important and fundamental as the difference between the two theories is,—the theory that reality is the Absolute as a concrete, individual, self-subsistent, harmonious and perfect Being, and the theory that reality is Becoming,—there is practically entire

agreement in the way in which the problem is presented. In both theories the world as we know it in our everyday experience is appearance, and the reality has to be sought for; in both, reality is infinite in richness and possibility, and in living experience we are in actual touch with it and know it; in both, this ultimate reality is of the nature of consciousness and not of the nature of a material thing; in both, discursive thought is the ground of contradiction and inconsistency that must find reconciliation in the absolute. But for one, reality is only reached by logical process through contradiction to reconciliation, and for it no form of immediacy is an absolute and reliable datum, while for the other, reality is known immediately in the intuition of life, and thought leads away from and not towards reality.

1. M. Bergson's theory of the indeterminism of life and of its relation to the mechanically determined organism is called by Mr. Bosanquet a guidance theory, and comes with all such theories under the general condemnation that they fail, and cannot but fail, to exclude the energetical principle they are intended to deny. There is no way in which to conceive a guiding activity unrelated, in the scientific meaning of the law of the conservation of energy, to the mechanical system. Now if I interpret M. Bergson's theory rightly, it is not a guidance theory in the meaning Mr. Bosanquet assumes.¹ In saying this I do not mean to deny that life is manifested in the guidance of the organism, but I do mean to deny that the relation of life to the organism is conceived as a relation of two different kinds of reality, each of which is for itself, but one of which controls or guides the other. As I interpret the theory it is that one and the same reality lived and known from within is freedom, viewed from without is necessity. What we have to explain is how it comes that what is one movement appears as an opposition of two principles. It is this that the metaphysical theory endeavours to do. Let us

¹ Mr. Bosanquet quotes (p. 205) a passage of *Évolution créatrice*, which seems to support his view but which is in my opinion decisive against it. "Supposons, comme nous le faisons entrevoir dans le précédent chapitre, qu'il y ait au fond de la vie un effort pour greffer, sur la nécessité des forces physiques, la plus grande somme possible d'indétermination. Cet effort ne peut aboutir à créer de l'énergie, ou, s'il en crée, la quantité créée n'appartient pas à l'ordre de grandeur sur lequel ont prise nos sens et nos instruments de mesure, notre expérience et notre science" (*E. C.*, 125). Mr. Bosanquet has italicised the last part of this sentence in order to show that the discontinuity between the guiding element and the inert mass is really bridged by the notion of inappreciable quantity. But as I read the passage the whole force of the contention is in the words "n'appartient pas," which must be intended literally. I think the context bears this out.

however first look at the problem as it confronts us in science.

In M. Bergson's view the way in which life uses the organism in which it is embodied is by releasing at will the energy which the organism has obtained, directly or indirectly, from the sun. Organised life shows itself in the sudden and quasi-explosive release of accumulations of energy. What is the nature of this releasing activity? Is it, or is it not, an essential part of the mechanism it controls? Clearly if it is part of the mechanism, then, in whatever way we may conceive the manner of its activity, we are not delivered from necessity, we have not discovered a principle of freedom. As I interpret this view, life is not force, it does not supply energy. The difficulty we have to meet would be comparatively simple were it only that the energy is so infinitesimal in quantity that it is undiscoverable and practically negligible. The often-quoted illustrations of the operation of the hair trigger, or the firing of the electric spark to explode the mixture in the cylinder, or the idea of a Maxwell's demon who times the opening and closing of a frictionless shutter, help us only so long as we abstract from every idea of energy in the operation itself. Surely if such a patent fact as life were energetical in its activity, it is incredible that science should be unable to detect it. And moreover if life is a form of energy, then however obscure the manner of its activity, it offers no special problem. But what M. Bergson insists on is that science cannot comprehend life because life is a different order of reality to that order which alone will fit our intellectual frames. The nature of this reality is that it is purely temporal. What then is the nature of the action which takes place at that exact point at which life is guiding or controlling the organism by exploding or retarding the explosion of its stored energy? At that point life is externalising itself in action. There is to outward appearance a dualism, for a pure time existence, memory, seems to be inserting itself into a purely spatial existence, matter. But even were the dualism unreconcilable, it is clear that the relation cannot be energetical because force or energy does not enter into the notion of time. We have only to compare the notion of time with that of any physical thing whatever to see that in its very nature time excludes the idea of force. Take for example the scientific conception of light, infinitesimal though the quantity of its energy is when compared with its sensible manifestation, that quantity is measurable and known by actual demonstration. The pressure of the light wave is supposed by some physicists to account for

the phenomenon of the comet's tail which streams from the sun whatever the direction and velocity of the comet's movement. Is there anything even analogous to this in time? The notion of pressure in time itself is nonsense, and if we speak of time as devouring, gnawing, eating into things we are using metaphors borrowed not from science but from mythology.

The failure of science to comprehend life is not due then to the limitation of science but to a natural disability. Life is real time. Science deals with spatial reality, with things which change, with matter that is moved, not with the change and movement itself. The problem of the relation of life to matter is for this reason ultra-scientific, it can only be explained, if it can be explained, by a metaphysical theory. M. Bergson's theory is that matter and intellect are engendered by life; that life which is pure duration has formed itself into intellect in order to take an external view of the reality it knows immediately in living, and matter is that view of the reality. The purpose of this evolution is itself intelligible, the intellect serves activity. How are matter and intellect engendered? Quite naturally, M. Bergson replies, by the interruption of a tension. He conceives life as a tension, the relaxing or releasing of which is extension or matter. Now without going into the whole theory, what I am concerned to make clear about it is this, that life and evolution are not antecedent conditions of matter and intellect, and the former have not supplied the energy which has passed over into the latter. Activity is *élan de vie*. The relation of life to matter is the relation of the tension of the spring to its release, the release is nothing but the interruption of the tension. If it is urged that even these similes are inconceivable without the notion of energy the reply is that that is because we are trying to express in scientific imagery a fact that is ultra-scientific.

The metaphysical, or at least epistemological, principle that is involved in this view is that we can and do know life in its immediacy. In Mr. Bosanquet's view, on the other hand, the immediate is abstract and fleeting, it cannot therefore be a type of reality. The true type of reality is only found in the concrete universal. In following the logical process of thought we are not leaving reality behind, but advancing to a full, complete, concrete individuality. Now to me the whole point at issue between these two entirely opposed principles of interpretation of the universe can be narrowed down to one simple issue, which can be resolved almost into a question of fact. Is time appearance? If

it is, then clearly Mr. Bosanquet is right when he says that in vain shall we look for reality in the immediate. If reality can be grasped at all by the finite mind it must be *sub specie eternitatis*. On the other hand if M. Bergson has effected a revolution in the philosophical point of view, it is centred on the recognition of the absolute nature of time. It is this alone that justifies the primacy of becoming over being. It is this that gives meaning to the idea of creation, of evolution and of freedom. All reality, if time is absolute, how rich soever with facts accomplished, and with potentiality, is gathered up into present activity. It is because we recognise that in time we have the very stuff itself of reality that life is seen to be wider, fuller, completer than intellect. Here then is the contrast between the two philosophical standpoints. For one, life expresses the fact of present time existence and only in immediacy do we touch reality. Life, as this immediate time existence, is creative. For the other, time is appearance, and not life but logic is creative. The notion of creation is correspondingly different. "Everywhere it is creative Logic, the nature of the whole working in the detail, which constitutes experience and isappreciable so far as experience has value." From the one point of view we see a free creative activity, whose whole reality is in the immediate present, which as an immense impulse carries along with it its past into an open future. From the other point of view we see an unceasingly active thought or logic, seeking ever to reach the reality that exists timelessly in the Absolute. For the one, time is the whole reality, for the other, time is the appearance that the part must assume in abstraction from the whole.

The assertion then that there is freedom in the very heart of things does not mean that somewhere, perhaps within the electron, perhaps beyond the stellar system, there may be a principle of indeterminism, and that in some mysterious way it enters as life into the mechanism of the material universe. There is no limit to determinism, because it is the external view of reality which we call nature, and there is no limit to freedom because it is the whole nature of reality as it lives. Freedom means simply that the universe is open to the movement, change, becoming which is ultimate reality as we know it immediately and intuitively. That same reality when we intellectualise it is complete determination.

2. The method by which the intellect works is, in M. Bergson's view, by seeking similarities, by binding the same to the same, by marking out in the flow of experience systems, chains of sequences, identities that can be reproduced or repeated. It is by this method of viewing reality as a repetition

of identities that the intellect serves its practical purpose. In geometry we see its most complete success, for in that science we deal with abstract space and accordingly obtain therein the most perfect freedom of identity from difference. Geometry is therefore the typical science. In Mr. Bosanquet's view this is a fundamental mistake, and he charges M. Bergson with a total misconception of the nature of logical process. The criticism is peculiarly subtle, and from its point of view is probably unanswerable. "If the function of science is to apprehend 'the same producing the same' the operation of scientific principles in leading to novelty whether of truth or practice is made wholly unintelligible" (p. 36). Every proposition that is not a pure tautology (and a tautology is not a proposition) is the affirmation of identity in difference. It is difference alone that makes possible logical advance, in it lies the very pulse of the movement of thought.

Irreconcilable as these two logical doctrines are when thus placed side by side, the real opposition is in the principle that lies behind each. It is from the principle of the nature of reality and the *rôle* of the intellect that each of the writers has adopted, that his special view of the essential nature of the logical process follows. One thing is certainly clear, that for each the fact is the same—whatever the nature of logical activity there is in reality no identity in the sense of absolute sameness or similarity. In M. Bergson's view there is no real sameness at all, for life is becoming, it is every moment new creation. Sameness is the work of intellect which selects, identity is an ideal which it strives for. For Mr. Bosanquet, identity is the appearance from which thinking sets out, and the ideal for which it strives is the whole as a perfect individual. In M. Bergson's view the intellect is the contraction or concentration of consciousness into an instrument of action. It is not an instrument in the sense of a tool that life has acquired and makes use of; it is the whole life or consciousness narrowed, organised and focussed into an acting centre. It serves life by limiting knowledge. In man this mode of activity has reached, as far as we can judge from our limited outlook, its most notable success. It gives us knowledge of matter, and matter is the form which the flux takes for the intellect. Reality is the flux, intellect takes views of it, contracts by memory the incessantly changing life, marks out periods, creates things, represents space. It spatialises even time. Its success is never complete, but the more abstract its subject the more it is at home, the more perfect is its control. The more rich and full, the more concrete the reality we seek to fit into the frames of our concepts

the less is our success. Therefore it is that geometry, the science of homogeneous space, is the type of successful science, whereas science fails altogether to comprehend life. This is the theory, and from it follows of necessity the view of logical process to which Mr. Bosanquet objects. Now the possibility of prediction is a condition of intelligent action, for intelligent action implies the direction of means to an end. That prediction may be possible the world must be viewed as uniform, as subject to natural law. Natural law means that the same causes produce the same effects, and this involves a view of the universe as a system of repetitions. In taking this view the intellect works an economy, and the mode of its working is by limiting, selecting and excluding. Suppose it were otherwise. Suppose we were at once and directly conscious of the myriad influences that are passing at every moment through every centre of action, suppose we were in this sense omniscient, what would our knowledge be of? Being immediate it could not be knowledge of a perfectly complete individual, it would be knowledge of universal movement in being, and clearly it would be useless for individual action. Therefore it is that the intellect allows only those influences to reach consciousness that concern possible action, and therefore it is that logical process is the binding of like to like, and that science is the apprehending of the same producing the same. The like and the same, the repeated identities, are not the absolute but the intellect's limited view of reality. Science is possible on account of just this limitation. Science is measurement. Reality can only be dealt with by science in so far as it is measurable and so quantitative. Quantitative relations between homogeneous units either exist in their own right or else they are ideally constructed, but without them science is impossible. It is in forming these units, in arranging them in systems in which the elements repeat one another that logical process advances science. The ideal of science is a perfect mechanism.

3. The charge against Absolutism that Mr. Bosanquet devotes himself most earnestly to rebut is that it involves the conception of a reality of which it may be said that for it *tout est donné*. I think he is successful in meeting one form of the difficulty. In a well-known passage, Laplace imagined an ideal calculator to whom the state of the universe at any future moment would be fully known. Mr. Bosanquet argues that this ideal is not only at an infinite distance from practical possibility but that it contains a theoretical defect. The calculation could only deal with quantity and from a merely

quantitative calculation it is impossible to predict the psychical experience that would accompany the physical conditions. Either the imaginary calculator is supposed to stand to the world of mind as a physicist stone deaf from his birth would stand to the world of sound; or else there is included in his knowledge of all forces the respective situations of all beings in the world at a single moment, the full experience of mind and its actual objects. On the assumption of this last supposition would not the calculator be doing more than calculate, would he not in fact be doing the work of intelligence, be undergoing the experience in the fullest sense? This argument is, in my view, quite sound and effective against a charge of mechanical determinism, but it is not determinism in the mechanical sense of science that is charged against the theory of the Absolute. And indeed mechanical determination can only have reference to time, and the Absolute, in Mr. Bosanquet's view, is timeless. But the very same argument, used by M. Bergson (in the last chapter of *Les Données immédiates*), derives its whole force from the insistence on the fact that real duration,—time as it constitutes psychical experience, not the spatialised time of science,—is absolute. The astronomer predicting an eclipse deals with time as a homogeneous medium, bare of quality. He spatialises time and can therefore embrace indefinite periods in one mental concept. But to be able to predict what a conscious individual will do at any future moment, the calculator must know what the character of the individual will be at that moment, and to know this he must know the real duration through which the individual will live. He cannot contract or schematise the experience which forms the character which determines conduct. The knowledge necessary to predict the behaviour of a moral agent, were it possible to possess it beforehand, would require just as long a time as it would take to form the character, right up to the moment of action. To know a person's character like this would be indistinguishable from living it, and in what time could that knowledge occur?

The spatialised time of science is appearance alike in M. Bergson's view and in Mr. Bosanquet's, the real issue is between the two principles as to the nature of the Absolute. Is it timeless or is it time? If Mr. Bosanquet is to rebut the charge of *tout est donné* he must show that in logic we have not only speculative but real activity, an activity that creates. Logic may show the necessity of the Absolute, and from its necessity affirm its existence. It does not create the Absolute. What may be and must be surely is, Mr. Bradley tells us.

But the Absolute whose existence logic affirms is not awaiting completion. Logic may be the "spirit" of the totality working in the part, but it adds nothing to the whole, it does but reveal its nature. And though the Absolute is experience, it is not experience as it develops in time, but as the totality of a perfect individual, self-subsistent and eternal. Degrees of reality are not themselves absolute but approximations to a type, the reality which exists ideally in the Absolute. It is in this sense that in the Absolute all is given, that for it freedom is appearance.

I have not touched on the question of Value. It is easy to understand Mr. Bosanquet's enthusiasm for the Platonic type of Being as the principle of Value—who indeed does not feel drawn towards it?—but surely it contains a theoretical defect. It is impossible to reconcile it with a real time process. The freedom that is affirmed in the view that time is absolute and not appearance, that reality is creative life, may perhaps be no ground for confidence in human or any other progress, but it does escape this defect. It does not set before us a reality to which we can add nothing, a perfection eternally complete.

III.—IDEALISM AND THE REALITY OF TIME.

BY HUGH A. REYBURN.

IDEALISM postulates that reality is a single system, so that it is possible to pass from any point in it to the standpoint of the whole. If the implications of any part of experience were developed fully we would be led inevitably to the entire system within which this part has its being and significance. The intention of this paper is in a sense a defence of the reality of time against certain methods of articulating this postulate of Idealism, and I may be accused of setting a value on what is merely actual against the deeper insight which transforms the given and finds things to be other than they seem. It is advisable therefore to make clear that although current forms of Idealism are alleged to be defective, the remedy is not a transition to Pluralism, but a more genuine interpretation of the Absolute. Not less but more system is required.

The obvious finitude of our minds does not imply that we have a firm abiding place in any particular fact or mode of life. It seems clear that such principles or facts as life, the will, the self are not self-explanatory. They point to large portions of reality beyond them, they arise in the course of time, they have presuppositions both in a temporal and in a logical sense, and we have to admit that in our experience, at any rate, they do not mount to the level of complete universality. The individual finite self is the vehicle of forces and influences which are wider than it is; and whether we call this wider reality Nature, or the Absolute, or Humanity, or God, the particular self when compared with it is imperfect, weak and dependent. No particular experience can stand undisturbed amid the movement of things; every part of our world is symbolic and self-transcendent in some degree. The first task of an Idealist philosophy is to change the attitude of the thinker. Instead of taking some one particular datum as stable and absolute, e.g., the Cartesian self or the Pragmatists' purpose, and interpreting all in the light of this unexamined fact, Idealism acknowledges that nothing short of the system of experience as a whole is absolute. If we were to adopt in all sincerity the Humanistic scale of values,

it would be difficult, if not impossible, to avoid a pessimistic conclusion. Reality is too obviously not constructed in the interests of particular people; the world does not conform to our needs unless we have adjusted our needs to that which the world is prepared to recognise. It is hopeless to search for some one finite satisfaction towards which all things converge, and to which they all minister. It is not easy to see how those who adopt the Humanistic view avoid the inner conviction that reality cares little for human purposes and selves, and is in the main indifferent to morality. The superiority of the objective to the finite subject is made manifest by the insistence on trial and error, and on postulation at one's own risk, which is often found in writings of this school. If we accept the ultimate rationality of the world, we must agree with Hegel that philosophy ought to be cosmocentric, and that the highest value is the realisation of a world, and not the self-satisfaction of a finite part of that world.

The appeal to history and contingency against science and law has thus a false motive. It is an attempt to break the coherence of the whole, and to maintain freedom and particularity at the expense of system and totality. Idealism holds that the abstract and perhaps hypothetical universals of natural science do not offer an adequate account of the whole of experience; but there is disagreement concerning the relation of the higher categories to the inadequate mechanical ones. What is the relation of the laws of physics and chemistry to the more comprehensive principles beyond them, *e.g.*, such as are fundamental in moral responsibility, in art and in religion? The main danger in replying is a tendency to Dualism. The difficulty is to find categories sufficiently concrete to include all the truth and vitality of the ordinary common-sense view of things, and at the same time to do complete justice to science.

Dr. Bosanquet offers us the most recent attempt to state the real nature of experience; and his view of the Absolute mediates between the doctrine of Hegel and that of Mr. Bradley. Hegel believed that thought is able to discern the full nature of the real, and that its limitations are *de facto*, and not necessary in principle. Mr. Bradley convicts thought of suicidal defects, and insists that in spite of the reality which it contains, it is ultimately an appearance which is not adequate to the whole. To reach the whole, thought must be destroyed. It is difficult to say with which view Dr. Bosanquet agrees in the last resort. He insists on the rational character of the whole, and he realises more clearly

than does Mr. Bradley, that the dialectic of experience is not merely a condemnation of appearances, but the actual reconstruction for us of the world. The contention of this paper, however, is that his view is not completely successful, because he has not done full justice to the lower aspects of things. A concrete category exists and operates by reason of the peculiarities of the abstract and lower categories which it sublates ; and it is impossible, so my argument runs, to understand the nature of the whole unless the function of the parts is known. Dr. Bosanquet appears to adopt at least an Agnostic view of the reality of time. His view tends towards the mysticism of Mr. Bradley, rather than towards the Idealism of Hegel.

Dr. Bosanquet rightly points out that it is of the utmost importance that we should turn in the right direction when we seek to bring wholeness into our lives, and that we should use as our clue the structural universals of our highest and noblest moments. In a marginal analysis he says: "Revolting from Mechanism we should go not to History but to Art and Religion".¹ We are presented with two antitheses which tend to coincide. History stands over against art, morality against religion. Prof. Ward, e.g., interprets reality from the standpoint of history and morality ; Dr. Bosanquet proposes to interpret it rather in the light of art and religion. With Dr. Bosanquet's polemic against identifying freedom with contingency and with the absence of objective coherence between the self and nature I am fully in accord ; but there seems to be a real factor of life present in the experiences on which Dr. Ward relies, which is not usually found entire in art or religion. The antithesis with which I intend to deal is that of art and history. The further implications of morality and religion must be left aside.

It is not necessary to state here the positive qualifications which art possesses for the task of elucidating the meaning of reality. A reconciliation of subjective and objective is accomplished by the artistic object, and the mind has, as immediate and present, an apprehension of that deeper significance of things which common-sense is wont to regard as beyond this life altogether. The argument requires rather that the defects of art should be emphasised. Art is always symbolic. We may agree with Plato that it consists of imitation, although it is not an imitation of finite objects. The object that is copied in the highest works of art is the Idea itself ; and the meaning of life as a whole is present in some degréee. But art cannot rid itself of the defects of copying.

¹ *Principle of Individuality and Value*, p. 78.

The entire meaning of a life, or even of a mood, lies only in its full development. The finite forms in which the principle realises itself are not indifferent to it, and if these are altered and abbreviated the principle itself is weakened. Art presents the significance of things in a foreign medium. It is always sensuous, and reality at its highest terms cannot be presented in a single sensuous form. One of the categories of real life which is generally treated as subordinate by art is time. Much art is timeless—temporal relations seldom enter into its content, and its significance is usually indifferent to them. The danger of using art as a clue to the structure of the Absolute is that time is apt to be neglected in the result; the unity which is valued is one which is beyond time, and holds independent and perhaps in spite of it.

Dr. Bosanquet cannot be accused of ignoring time altogether. He desires to do justice to all the claims of externality and objectivity, and his basal position is that the freedom and strength of the individual comes from his connexion with nature and not from his isolation. Indeed much of the first series of his Gifford Lectures contains criticism of M. Bergson's view of time, in which he maintains in effect that M. Bergson does not grasp the significance of the category whose name he uses. But it is questionable whether Dr. Bosanquet himself has taken time into account. In what follows I wish briefly to note some characteristics of time, and to suggest that criticism of it is often too facile; then I shall argue that Dr. Bosanquet does not include the whole truth of these characteristics within his view, and that his conception of the Absolute is to that extent defective.

Time presents us with two aspects. On the one hand it requires permanence and unity of content; on the other it implies change and exclusiveness. This can be seen in the relatively simple forms of experience from which the conception is derived. The simplest experience of time is given in what Prof. Stout has called the 'not yet' and the 'no more' attitudes. We have a vague expectation, or apprehension of loss, and this involves a contrast with a content judged as present. Any such experience extends over a lapse of time, but it requires an identity of content. The 'not yet' consciousness involves a conation, a holding together of the various moments, so that there is one purpose or object developing throughout. If the process were discontinuous, and if the identity of content were broken at any point, the purpose would be meaningless, and the contrast between idea and fact, between future and present, would disappear. But, on the other hand, the apprehension of time implies

consciousness of the externality of the past or future to the present. Each moment is negated by the other. The past is that which is no longer, the future that which is not yet. The dog in the fable who dropped his bone to grasp the reflexion, learnt very decidedly that in the 'no more' consciousness the present excludes and negates the past. Each of these two aspects is essential to the conception (or perception) of time, and if either were taken away the whole would vanish.

This externality of the parts of time to one another is akin to that of the parts of space, but it is distinct from it. The mode in which we try to picture abstract temporal relations to ourselves may borrow greatly from spatial imagery, but the amount of the loan can easily be exaggerated. M. Bergson attributes all the apparent externality of time to a confusion with space; and the result in his view is that time is a category lacking all externality. This is a mistake. Time has an externality of its own; its parts stand out of one another in their own right, and this outwardness is not derived from space. The consciousness of the exclusiveness of parts of time probably arises psychologically from different primitive experiences from those through which we become aware of space; and in its developed form time, or that aspect of time which we may call succession, is a distinct mode of arranging the contents of experience. If we say, e.g., that Blucher reached the field of Waterloo at the eleventh hour, we do not mean that he arrived at a point eleven parts from one end of the field. He was not present at any hour before the eleventh, and those previous hours are external to the one in which he arrived; but this externality is in no sense spatial; it is *sui generis*, an outwardness of past and present, or, if we like, of before and after. If we remove this aspect of time we destroy the whole. If we do not keep the various happenings each in its own historical place the whole becomes confused, being and not-being are predicated at once and in the same way. Time thus involves the reality of succession: and if succession is not real, time is not real. Hegel has emphasised this externality of the parts of time to one another, and he calls the category as a whole the self-external.¹ The aspect of succession can be represented in more than one way. Past, present and future, says Hegel, are the dimensions of time.² It is also possible to represent succession in terms of before and after, or earlier and later. The difference between the two series appears to be twofold. There are

¹ v. *Encyclopædie*, § 258.

² *Ibid.*, § 259.

three terms in the first series and two in the second. This may be regarded as due to the elliptical form of speech used in the second case. All reference in the time series involves a fixed point, a base, and in judgments of perception this is always the present. For perception the present has a higher importance than the past or future, and it is invariably chosen as the centre of reference; past and future are measured in opposite directions from it. The series indicated by before and after does not have such an inevitable starting-point. The interest for thought lies generally not in focussing everything on to one particular point, but in comparing *e.g.*, distances in various parts of the series with one another. For this purpose two terms are sufficient. Every point in the series can be treated by thought as the present, and this term disappears from the expression. The reason is not that thought abstracts from the present, but that because every point may have the characteristic of centre, or base, the significance of the term as a unique point is reduced. The difference between the two series is that between a subject within the stream of time, unable to rise above it, and confined for his starting-point to a datum, and a subject which can see the series as a whole, and invest each point with all the characteristics in turn. It is the difference between perception and thought. The second point of distinction is connected with this. The subject which is in the stream of time, and is limited by his datum, regards the past as fixed and dead, and the future as uncertain. Such a view seems in the last resort to be due to defective knowledge. If we hold firmly to the systematic character of reality and reject the conception of loose-jointing, the contingency of the future and the deadness of the past are not fully real. In a sense the past is altered as the world develops in the present. The past is only part of the whole, and the process of filling out that whole modifies the past. In the same way our failure to estimate the future does not indicate that the future is an unreality detached from the present and the past. The conception of before and after treats each term as real and as in the system; so that the contrast is again between perception and the more systematised form of experience which we call thought. The series of before and after is thus in a sense derivative; but if it is taken concretely so that each moment is recognised to be a present with a past and a future, it is a truer rendering of the nature of succession and hence of time.

We may now consider the way in which time is sometimes judged to be unreal. The problems raised are all connected with the fact of change. Change occurs in time, we say;

and thinkers who reject change deny the objectivity of time. There has always been a tendency in philosophy to deny the reality of change, and the philosophers who have given way to the tendency have often been called Idealists. Being which does not alter seems to have a stability and strength which the mind demands in its object but which it cannot find in a world of becoming. It is, however, abundantly clear from the history of philosophy that such a doctrine cannot be made absolute. Change appears, and we know reality only through its appearance. If change is repudiated as unreal, insoluble problems are raised regarding the relation of appearance and reality.¹ The usual device which is adopted to discredit change and time is to distinguish two or more aspects of the whole conception, to isolate these, and so set them in absolute contradiction. The method was perhaps invented by the Eleatics, it was exploited by Lotze, and Mr. Bradley has improved it and extended it over the whole field of experience. This procedure is not that adopted by Hegel. For Hegel any imperfect conception implies another over against it with which it is bound to come into conflict. But the contradiction is not final; it is due to an appearance of completeness presented by the parts, while at the same time they manifestly require a complement. But according to Hegel each such conflict can be resolved in a more concrete conception. To take the simplest example, being and not-being are both resolved in becoming. Becoming is a wider and deeper unity which maintains both of the imperfect aspects within it, and requires both in order to be itself. The method criticised is other than this. When the imperfect and one-sided conceptions are set in opposition, it does not recognise that an abstraction has been made and that each part is defective because it is merely a part. It pronounces one to be essential and the other non-essential. Usually in the case of change it adheres to the aspect of permanence, and bids the aspect of instability and difference depart to the place appropriate to merely subjective appearances. Dr. McTaggart, e.g., follows this course.² He analyses time into two simple series; the one, called the A series, consists of the relations of past, present and future, and the other called the C series, is constituted by a timeless order. The C series is declared to be real, while the A series is a mere appearance. I wish to show that the A series is found to be unreal by Dr. McTaggart because the C series is assumed to be the criterion. The main objection to the reality of time

¹ Cf. e.g. Joachim *A Study of the Ethics of Spinoza*, p 226.

² MIND, Oct., 1908.

urged by him is that the A series is self-contradictory. Past, present and future are incompatible attributes—that which is past cannot be present, and so on—but each is applied to one and the same event. I have thought of the writing of this paper as an event in the future, it is now a present fact, and will soon, I hope, be in the past. But these predicates cannot all apply to the same event, for the one object cannot be past and present and future. Hence the whole category, *viz.* the A series of time, is an illusion. The natural retort to this is that the predicates are not absolutely exclusive, and that they are opposed only when applied to the same object in the same way. But to this Dr. McTaggart objects that the attempt to prepare those differences in the object which would enable it to receive the different predicates without confusion, presupposes the series which it is intended to explain. If we say that the event *was* future, *is* present, and *will be* past, we are arguing in a circle, and possibly are involved in an endless regress. We assume time to explain away the contradictions of time. We need not ask at present whether Dr. McTaggart's position is sound when he says an A series together with a C series is sufficient to constitute time. Although there are good reasons for supposing that the real nature of succession is more truly presented by the series of before and after, which Dr. McTaggart treats as subordinate, this point need not be pressed, and we may accept the A series as typical. The point of importance is that the argument criticised makes use of the objectionable method previously indicated. Having analysed time into two aspects, on the one hand a series having absolute permanence, a timeless order, and on the other a series whose predicates are intelligible only on the assumption of the reality of change, Dr. McTaggart sets the one against the other, and holds the contradiction to be final. In the result he rejects the aspect of succession. Having said that past, present and future are incompatible predicates he asks his critic to make them compatible without involving the conception to be justified. But is it obvious that past, present and future are incompatible predicates? Predicates, as such, are not incompatible, only judgments are so. The form of words used to express the judgment is of no consequence; Dr. McTaggart must show that there are two judgments in conflict and that the meaning of the two cannot be harmonised. But the predicates in question, as used, are correlatives. Past, *e.g.*, has its meaning with reference to the present; it comes from the 'no more' consciousness, and contains a contrast with actual satisfaction. The pre-

dicates, past, present and future, when applied to the same event, are used at different times, and from the logical point of view that means that the various judgments have a different content. The two propositions, X is past, and X is present, are elliptical. Each expresses a relation of an object to the whole field of experience containing it and to a centre in that field. This centre is not named, but it is understood, and without it the judgment would have no significance. Dr. McTaggart's argument eliminates this centre. The judgments come into conflict only if they have the same centre, or, in other words, if different elements are related in the same way to the same point of reference. And, mistakes apart, this occurs only if the unreality of time is assumed. How is the elimination made? By interpreting the dictum 'once true always true' in a static sense. It is assumed that for truth time does not exist, and it naturally follows that the object has no room for the peculiar predicates which belong to time. No doubt there is a sense in which reality is timeless, as there is a sense in which all things are one; but my contention is that there is no more justification for interpreting the timeless aspect of the world as exclusive of change than there is for interpreting the unity of reality as exclusive of difference. It can be maintained that a merely timeless Absolute cannot include all the reality of experience, and on this view timelessness is not the whole conception but only an integral part of it. If this position is taken, past, present and future do not appear *prima facie* as contraries, they seem rather to be solutions of experiences which without them would be self-contradictory. They are incompatible only if timeless is not an aspect of the whole but the whole itself; and that is the point at issue. *Prima facie* the proposition X is past, expresses the relation of X to a different centre to that used in the judgment X is future. Dr. McTaggart has to show that this difference of content is not there. The onus of proof lies on him and not on his opponent; and his argument must not assume that reality is ignorant of change. It is very easy to come to judgment with half-concepts for whose value we have positive evidence, and to criticise the other half by means of them. But the method is unsound. It is unfair to reject time because its contribution to reality has a different character from that made by permanence.

Before setting forward the positive claim which time has to reality, and to a place in the Absolute, I have to justify the statement that Dr. Bosanquet is ultimately of the same opinion as Dr. McTaggart in this matter, at least so far as

its practical effect on his view is concerned.¹ In his logic² Dr. Bosanquet answers the question, "Is not Time Real?" in this way: "Everything is real, so long as we do not take it for what it is not. Time is real as a condition of the experience of sensitive subjects, but it is not a form which profoundly exhibits the unity of things." The statement is very cautious, and one must admit the truth of most that it asserts; but what is the significance of the reference to sensitive subjects? The meaning appears to be that time is a form of the *appearing* of reality to us, and is not a qualification of reality itself. A timeless whole is apprehended part by part; time is a mode of the act or process of knowing, but it does not characterise the object. Dr. Bosanquet seems to treat time as a subjective hindrance to the direct appearing of the total real. "The first operation of our intellectual synthesis is to build up an ideal objective order which, though itself not in time, yet contrasts as a more or less completed reality with the sensitive experience which is always passing into it."³ And speaking of history in its aspect of mere succession, he says: "History therefore, in the sense of the mere record of remembered fact, would seem to have for its ideal to disappear into systems of hypothetical judgment, in which complete ground should do duty for cause and effect, and the relation of time should disappear."⁴ It is true that Dr. Bosanquet tells us that history is more than such a mere record, but it is significant that succession on his view is said to be taken up into a system where the relation of time *disappears*.

It might be said that although time is irrelevant to logic, it may be a functional reality in metaphysics: and although the implied distinction between logic and metaphysics has difficulty in maintaining itself, we must turn to the Gifford Lectures to see if the retort has any bearing on Dr. Bosanquet's view. We may note first that time is said to be a hybrid experience,⁵ and succession appears to be the inferior element. Space and time are "externality and succession, presupposing a degree of unity which would annihilate them if it either were completed or were reduced to zero".⁶ Dr. Bosanquet does not commit himself carelessly to the unreality of time, but his tone is against its objectivity. He urges that we must "distinguish the conception of changing or progressing as a whole from the conception of uniting in a self-complete being character-

¹ And, one might add, so is M. Bergson.

² Vol. i., p. 273.

³ *Ibid.*, p. 272.

⁵ *Individuality and Value*, pp. 338, and 371.

⁴ *Ibid.*, p. 276.

⁶ *Ibid.*, p. 371.

istics which for us demand succession".¹ The implication is that "characteristics which for us demand succession" can be brought together in reality and harmonised without using the conception of time. This interpretation is confirmed by Dr. Bosanquet's method of criticising the view that the span of consciousness provides us with the reconciliation of timeless and temporal. He presents a dilemma. "Among the occurrences which are present as at once to a consciousness with a protracted time-span, the later must either modify the earlier, or not".² "If within the one specious present, the later occurrences do not modify the earlier, if, that is to say, as in a common temporal succession, the earlier are not influenced till the later have occurred, then we have no transmutation, but only a fixed panorama of exactly the same occurrences which form a diorama for the man who goes through them. . . . Omniscience is then to see in any lapse of successive events nothing more than a finite being would see so far as he followed that identical lapse".³ I.e., if the parts are external there is no transformation. On the other hand, if there is a transformation the externality of the parts, the succession vanishes. A man passes four hours in distress because he fancies that a friend is annoyed. At the end of that time, his mistake appears, and his misery vanishes. "If the later contents act on the earlier within the same specious present of the longer span of consciousness, in the same way as they do within the shorter specious present of an ordinary consciousness, the four hours interval of distress must for such a consciousness cease to exist as such. It cannot help being transformed, and turned, on the whole, to a feeling partaking of gladness." Dr. Bosanquet has set succession over against wholeness, the latter being under the name of transformation; and his dilemma appears to ruin the conception of the specious present. He admits that imperfection must be represented in the whole. Imperfect essays, such as a sketch for a picture, may have a positive value which we do not find in the finished result, and he believes that the Absolute must include the full truth of the sketch. But he says: "Transmutation must be the rule in the complete experience. Everything must be there, as all the artist's failures, and the fact of failure itself, are there in his success. But they cannot be there as analysed into temporal moments and yet drawn out unchanged into a panorama within a specious present of immeasurable span".⁴ Dr. Bosanquet

¹ *Individuality and Value*, p. 244. ² *Ibid.*, p. 387.

³ *Ibid.*, p. 388.

⁴ *Ibid.*, p. 391.

has opposed transmutation and succession in a way which seems to apply not only to the specious present, but to any conception of time; and one can only conclude that for him the unity which holds through time is the only thing of importance. The plan or principle or individual realises itself in spite of the appearance of succession; and the not-being which is a moment of change does not stain the content of reality. His view appears to be that time, for us, breaks the continuity of the whole, but this is appearance only. Causality with its temporal succession resolves itself on deeper insight into ground and consequent, where time is transcended and lost; and presumably the same thing is true when we interpret life through categories which are still higher.

This view, I take it, is in accordance with the clues which art affords to the nature of the whole. The poem may be spread out in time as we hear it, but that is irrelevant. The meaning, *qua* whole, is timeless. Time applies to the presenting of the whole and is not a form of its content. So too with the apprehension of a picture, and perhaps even with music. The aspect of succession belongs to "sensitive subjectivity" and not to the object itself; it is a scaffolding by means of which we erect the building, but when the edifice is complete the scaffolding is removed. This statement does not appear to do substantial injustice to Dr. Bosanquet's view, and a strong support for it is found in the fact that nowhere in his scheme does succession fulfil any function in the whole. The whole is in spite of succession, never because of it; and the heartiest welcome given to time is a doubtful toleration.

Idealism cannot afford to adopt this attitude. A static whole, a conception which excludes succession, cannot be the Absolute. If we turn from the guidance of art to some form of experience which includes both history and law, we find that succession plays a vital part. Let us take a somewhat trivial example first. In any game of skill the externality of moments of time is essential. The batsman in cricket must make his stroke at the moment in which the ball is there, and the bowler seeks to make him strike at a moment in which the ball is not in the right position. In most exercises of this sort 'timing' is important; and timing depends on the consciousness that one event must be contemporary with another event, and not with certain others. The plan of the whole is realised *because* the content of certain moments excludes that of other moments; that is to say, the unity of the whole depends on the self-externality of time. The same

function of time is obvious even in some works of art, although it is not the fact of chief importance. The whole conception of Othello depends on the externality of moments of time to one another, that is to say, on succession. If love and hatred and jealousy and remorse were all brought into direct and immediate relation, so that each is only as modified *ab initio* by the others, there were no tragedy. This argument does not mean that the 'long arm of coincidence' is a valuable weapon in the armoury of the dramatist, or a serviceable tool of the Absolute. Coincidence in this sense means a joining together in time of two events which have not brought themselves into that time by virtue of their content. The conjoining is external to the material, it is imposed upon it from without, and the plan has not complete coherence. But the matter is different when the unity of the content itself needs its parts to be external to one another in time, as in the game of skill. And art makes a proper use of time when the externality is an element in the integration of the whole. There is no escape from this in the drama, and none in real life. The 'not yet' and the 'no more' consciousnesses are essential to the life we know; most of our plans depend upon them, and if a merely timeless order is substituted for them, our purposes become unmeaning. The aspect of succession is not merely a hindrance to totality, it may be a means to it. And any conception of the Absolute which ignores this leaves out much of the meaning of life.

We may apply this contention to the question of freedom. Dr. Bosanquet, following Hegel, has shown that freedom does not lie "in the direction of isolating the self from the world".¹ It is found in action from within, and in the tendency towards wholeness which is found in such action. After maintaining, rightly as I believe, that the conception of external determination is not applicable, in the last resort, to a genuine totality, of which the concrete self is an instance, and that the self is free because its purposes are the potencies of its world, Dr. Bosanquet raises the difficulty of predetermination. "Previously existing circumstances, united in a centre . . . work out their inevitable resultant in combination with present conditions."² This to the ordinary consciousness is the gravest difficulty in the way of accepting the Idealistic conception of freedom as self-determination. It is little use saving the self from environment if we have to sacrifice it to heredity. The determining factors, it is said, lie in the past, and the past is outside the self. At first sight it appears as if the denial of the reality of time is best suited to meet the

¹ *Individuality and Value*, p. 326.

² *Ibid.*, p. 327.

difficulty. The appearance of externality is illusory, it will be said, succession is not true, and the internal unity of the mind is not thus limited. But on second thoughts we find no escape in this direction. Succession is there in some sense and it is potent; the statement that time is illusory means nothing more than that the self is unable to extend its grasp over the past or into the future when it seeks to be fully real. Time has been left outside the individual, and the externality of the past is a limiting feature which negates freedom. The only method of maintaining freedom is to justify the power of the self to include what is past, not as a dead element, but as a vital factor in the life of the present. To do this we must admit the objectivity of time, and allow the self which attains to reality to grasp time as a moment of its being. Dr. Bosanquet is anxious to include the full strength of objectivity within the free subject; but if succession does not come within the plan of the whole, and is not an ingredient in the real self, then the so-called free self is externally determined because it cannot identify itself with its antecedents. Time is the self-external, and the question for Idealism is whether this self-externality is to be made absolute, and this is the ultimate effect of calling it illusory and subjective, or is itself to minister to the freedom and strength of higher and more internal principles. If we can still call the self free after we have taken all considerations into account, it is only because there is nothing alien to it—not even the principle of externality itself.

The main contention that has been urged here might also be illustrated by reference to Dr. Bosanquet's treatment of causation and teleology. From the standpoint of this criticism he is right in holding that purpose is a subordinate form of teleology, but his argument is onesided. We cannot explain the world if we take bare finite purposes as our integrating universals, for each such purpose gains its significance from a wider whole within which it falls; and I do not know how Dr. Bosanquet's argument is to be met when he says: "Things are not teleological because they are purposed, but are purposed because they are teleological".¹ But surely this is only one side of the truth. Philosophy begins by negating the particular as such, but it must go on to restore within the universal the value and power which seems to crude common sense to belong to the immediate fact. Dr. Bosanquet does not do this fully, even in principle. Purpose is not self-explanatory, but it is not an accident. The fact that a teleological whole does occasion a finite purpose, and is

¹ *Individuality and Value*, p. 137.

realised in it, must make a difference to the teleological whole itself. It must have in it some necessity which drives it out into self-estrangement, and makes the purpose necessary if the whole is to be itself. But Dr. Bosanquet continues : "Thus, when we speak of the ultimate real as an individual or as teleological it is hazardous to say that purpose, in the sense of a craving unfulfilled in time, *can play any part* in our conception".¹ Finite contrivance does not make value, but there is a reason in the value for the contrivance which seeks it. Dr. Bosanquet's argument against Dr. Ward is weakened by the position he takes up here. "Every purpose, no doubt, implies a subjective value, but there is no reason why every true value should be a purpose."² Dr. Bosanquet leaves room for the retort that there is no reason on his view why *any* value should be a purpose, and as it is an undoubted fact that some values are purposes, it is still possible that all values are so.

Hegel recognised the necessity of including the lower in the higher, and whether or not his view is completely successful, he tries in the *Philosophy of Mind* to make the externality of nature contributory to the concreteness of spirit. E.g., in the *Philosophie des Rechts*³ he indicates that the loss of property through prescription is not an arbitrary device, introduced to avoid the confusion which would arise if old and new claims to property had equal validity. "Prescription," he says, "is based on the reality of property, and on the necessity which forces the will to go out of itself if it is to possess anything." The will must externalise itself, and it passes from abstract unity to concrete totality not in spite of but because of time. Dr. Bosanquet admits formally the necessity of finite experience to the infinite,⁴ but the conception is not articulated ; it does not appear within the structure of the whole. The passage from finite to infinite is all important, while the outgoing movement of the infinite into finite centres and processes in time is merely tolerated. The failure to recognise the reality of time is at least part of the reason for this.

Like Mr. Bradley, Dr. Bosanquet contends, if I understand him rightly, that the appearance of the whole in finite minds is an ultimately inexplicable fact.⁵ And one must be cautious when a philosopher adopts this defence. Explanation, in the sense of resolving a thing endlessly into what it is not, Dr.

¹ *Individuality and Value*, pp. 137-8. Italics mine.

² *Ibid.*, p. 127.

³ Section 64.

⁴ *V. Indiv. and Value*, pp. 243, 383.

⁵ *Ibid.*, p. 371; cf. *Appearance and Reality*, p. 226.

Bosanquet does not offer, and one does not ask for it. To explain is to set the object in a relevant context; and in this sense the whole cannot be explained. All explanation is within the Absolute. But it is reasonable to suppose that everything which has a context can be explained, and that the refusal to explain finite things indicates a failure of method. Questions may be asked of any one but a Pluralist or a logical Pessimist concerning any fact short of the whole; and it is difficult to see how it can be maintained that, for Idealism, time, or succession, is the whole. Such an imperfect aspect of the real as time has surely a context, and the failure to place time in its proper setting renders the higher categories abstract. Dr. Bosanquet's view would be more convincing if he had regarded the individual as real not merely in spite of finite teleology, but also partly because of it. To do this he would need to be in earnest with the reality of time.

It is one thing to discover that time is objective, and to catch glimpses of its mode of working; it is quite another to determine accurately the part which it plays, and to decide its relative value. There appear to be two main alternative views. On the one hand we may say that time falls *within* the whole, and that although change applies to the parts of reality the whole does not alter. Change occurs within the Absolute but the Absolute does not change. The other view would reject this conception on the ground that it treats one of the aspects of time, *viz.*, timelessness, as more adequate to the whole than the complete conception containing that aspect. The whole, it might be said, is a permanent which changes; and neither element is more important than the other. The decision of this question probably depends on the possibility of framing a conception of a changing whole which contains the grounds of its change within itself. The discussion of the problem must be reserved at present, but whichever of the two views is to be accepted, change and time are real. "In this way, truth is a Bacchanalian revel, where not a soul is sober; and because every member no sooner gets detached than it *eo ipso* collapses straightway, the revel is just as much a state of transparent unbroken calm."¹

¹ Hegel: *Phaenomenologie, Vorrede*, Eng. Trans., p. 44.

IV.—PRAGMATIC REALISM—THE FIVE ATTRIBUTES.¹

BY JOHN E. BOODIN.

THE problem of attributes is somewhat out of fashion since the dominance of modern idealism. It has become a habit to think of reality simply in terms of experience, and reflective experience at that. It seems to me, however, that with our new epistemological tools we are in a position to take up seriously some of the metaphysical problems, applying the pragmatic method. In using the term pragmatic, I do not mean to commit myself to any of the special doctrines which have recently passed under that name. I mean that any reality must be conceived as the differences it makes to our reflective purposes. This holds whether the reality in question be of the thing type or the self type or some other type.

I.

Substance has come to have a distinct scientific meaning in modern times. So far as it is possible to revive the Spinozistic conception of substance, it would now amount to the epistemological postulate of totality, *viz.*, that facts are part of one world in such a way that every fact can, under certain conditions, make a difference to other facts.² What those conditions are, it is for science to investigate. The differences must also be capable of becoming differences to a reflective consciousness under certain conditions, in order to concern us.

These differences are capable of being systematised into certain attributes—*summa genera* of differences not further reducible. My reflexions have led me to believe that there are five such attributes, irreducible to terms of each other, *viz.*, stuff, time, space, consciousness and form. Future

¹ A preliminary statement of this doctrine, under the title of "The Attributes of Reality," appeared in the *Journal of Philosophy, Psychology and Scientific Methods*, in 1907. As the statement is now somewhat antiquated I have used parts of it freely in the present article. A fuller statement will appear soon in a volume entitled *A Realistic Universe*.

² See, *Truth and Reality*, chap. vii., Macmillan, 1911.

investigations will have to determine how far these are ultimate attributes and whether there are others.

It is true that such attributes are abstractions from the total matrix of reality. But to say that they are abstractions does not mean that they are ideal or phenomenal in the sense that they belie reality. Without abstraction we can have no science of reality. These attributes are genuine aspects of reality if we must recognise them as such in the procedure of experience.

The classical discussion of attributes goes back to Spinoza. Spinoza makes causal difference, as well as conceptual, depend upon the possession of a common attribute on the part of the contents. He even goes farther and reduces the causal relation to the conceptual: "If things have nothing in common, it follows that one cannot be apprehended by means of the other and, therefore, cannot be the cause of the other".¹ This evidently is a confusion of causal dependence with logical dependence—a confusion of which later idealism has so often been guilty. With Spinoza this identification easily follows from the ambiguity of his parallel attributes, as we shall see later.

The same reality, according to Spinoza, figures in different attributes. Thus substance must figure as both thought and extension. It must also figure in infinite other ways not included in experience. Thus substance must possess not only all the attributes of which there is evidence, but infinite others. This is the mediaeval dogma of the *ens realissimum* of which we still find evidence in the idealist's conception of the infinite variety in which his absolute is supposed to revel.

It is not necessary to point out that Spinoza is inconsistent with his own thesis, that every fact within reality must be conceived with reference to a context, or, as he would put it, must have a common attribute with the rest of reality. He is inconsistent, first, as regards the relation between thought and extension, for extension must be conceived, and so must be capable of making a difference to thought. To be indifferent or parallel to thought would be to be without significance. He is still more inconsistent as regards his infinite attributes. These, by hypothesis, make no difference to thought, and yet are assumed. On the contrary, in so far as we make an *a priori* assumption, we must start with a finite number of attributes. Else knowledge becomes impossible. As a matter of fact, we have a right to assume only as many attributes as make a difference to judging or reflective experience. The question whether these are

¹ Spinoza, *Ethics*, Part I., Prop. iii.

altered by being known can have no meaning, since it is only for reflective experience that attributes have significance. We must assume that the attributes are what they are consistently known as in progressive human conduct.

It is unnecessary to point out that extension, with the geometrical qualities it implies in Spinoza, cannot be made an independent attribute apart from the energetic context in which a thing figures, including our perceptual organic context. Extension is as much a quality as is colour or tone. To be sure the quality of extension may be said to exist in contexts independent of experience. But extension, to be known at any rate, must figure in the context of our perceptual consciousness. And if so it cannot be parallel to experience in Spinoza's sense of forming an exclusive and complete world of its own.

Spinoza himself was far from consistent in the relative emphasis he put upon the two attributes. When he dealt with the problem of knowledge, he was inclined to regard mind as the mere consciousness of the actions of the body—*idea corporis*. He at least came dangerously near being a materialistic realist. As he puts it: "The object of the idea constituting the human mind is the body, and the body as it actually exists".¹ And again: "The human mind is the very idea or knowledge of the human body".² No wonder then that the order and connexion of ideas is the same as the order and connexion of things,"³ or as he puts it elsewhere "as the order and connexion of causes".⁴ It follows, also, that his theory of association must be strictly physiological: "Memory is simply a certain association of ideas involving the nature of things outside the human body, which association arises in the mind according to the order and association of the modifications of the human body".⁵ This materialistic tendency is seen also in his physiological theory of emotions: "Whatsoever increases or diminishes, helps or hinders the power of activity in our body, the idea thereof increases or diminishes, helps or hinders the power of thought in our mind".⁶ It follows, on this view, that our knowing the object does not in any wise alter the object, though our ideas may be inadequate, fragmentary or confused. Such privation of knowledge is falsity. Knowledge, when clear and distinct, takes account of the object as it really is in its own eternal system of relations which Spinoza calls God. Materialistic realists of to-day have repeated both

¹ Part II., Prop. xiii.

² Part II., Prop. xix.

³ Part II., Prop. vii.

⁴ Part II., Prop. xix.

⁵ Part II., Prop. xviii., note.

⁶ Part III., Prop. xi.

the theory and inconsistency of Spinoza, for while holding that mind is just the awareness of the body, he finds it hard to rule out mental facts as such with their own unique relations.

What blinded Spinoza to his epistemological materialism was doubtless his play on words. Thus he argues, as we have seen, that mind is the consciousness of the body. But he argues further that "this idea of the mind is united to the mind in the same way as the mind is united to the body".¹ He thus, after telling us that "the object of our mind is the body as it exists, and nothing else," substantialises this idea of the body as having a "distinctive quality"² of its own. This process can then be repeated on the idea of the idea, etc., *ad infinitum*. But the fact is that there is no new content provided for in this repetition. It is purely a trick of language. We remain, where we started, with mind as the consciousness of the bodily modifications. That we know that we know, in any case, only signifies that the attitude of knowing brings its characteristic feeling of belief with it, in so far as it is successful.

When Spinoza, on the other hand, turns to the problem of conduct, he becomes as idealistic as he is materialistic in his epistemology. He attributes all agency to systematic thought and the passive becomes synonymous with the confused and unreal. For in the case of ethical conduct, cause no longer means physiological processes, but clear and distinct ideas. Our mind is active "in so far as it has adequate ideas".³ "The passive states of the mind depend solely on inadequate ideas."⁴ And man can be said "to act in obedience to virtue" only "in so far as he is determined for the action because he understands". Finally, the mind's highest knowledge and highest virtue is to know God. And to know God is to love God and to love him with "that very love whereby God loves himself",⁵ "wherein our salvation or blessedness or freedom consists." Thus Spinoza halts between divided motives. Spinoza's logic at any rate leaves us only one attribute—one complete system whether of matter or thought.

Modern science, in so far as it has been allowed to pursue its own task, unhampered by metaphysical suppositions, whether of the materialistic or idealistic sort, has always insisted upon as many attributes or independent variables as the facts seem to require. These seem to be three for

¹ Part II., Prop. xxi.

² Part II., Prop. xxi., note.

³ Part III., Prop. i.

⁴ Part III., Prop. iii.

⁵ Part V., Prop. xxxvi.

natural science: space, time and energy. The conception of energy has gradually supplanted the conception of mass as a universal ideal of description. Mass¹ is applicable only within a limited field. It is not applicable, for example, to electricity; while energy with its equivalences of transformation can be made to cover the whole extent of process, material and immaterial; physical and psychological.

In spite of the fact that natural science has found it necessary to work with these three attributes, it has failed to define them in any clear way. The desire for simplification has always made itself felt. Thus space and time have always been regarded as pure quantity. But if space and time are pure quantity, how can they be given distinct meaning? We must look for the differentia of these attributes, as they are in fact implied in our attitudes to the world of processes with which science deals. Not the serial tools which they have in common, but their specific character, is what we must try to make clear. Certainly, as pure quantity, time and space are indistinguishable from each other and from quantity in general. While it is convenient to reduce time and space to pure quantity for certain artificial purposes of prediction, this should not blind us to their true character in the world which we intend thus to simplify.

Not only has the attempt been made to reduce time and space to pure quantity, but the same attempt has been made in regard to mass. Thus Karl Pearson would reduce mass to acceleration. But if mass and energy are pure quantity how can we get the different units with which quantity must deal? Quantity, obviously, means something different, whether it is concerned with chemical elements or electric potentials or neural reactions. But this only shows the confusion that has been too prevalent in the analysis of scientific concepts.

Moreover, while natural science, in its task of simplifying and anticipating the world of perception, has been forced to emphasise the above attributes, there are other attributes which, though neglected, are nevertheless implied in the whole procedure of natural science. Thus the attribute of consciousness—the condition of the unique relation to mind of being experienced or interesting, in short the awareness of a world, with its complexity—has been neglected by the natural scientist. This is natural inasmuch as this attribute is equally present to the whole field of problems with which

¹ I am using mass here in the sense of gravitational mass, not in the sense of inertia.

he deals, and, therefore, for his specific purpose can be neglected. He has set himself the task of dealing with a specific part of experience, not with experience as such.

Again natural science assumes that its facts can be formulated into a system, *i.e.* that they can be explained in terms of a finite number of simple principles. This obviously is not deducible from the attributes of space, time and energy. On the contrary, it is a formal presupposition or ideal which is implied in all our cognitive endeavour. It holds at any rate in the part of the universe which is moulded by our will; and if science is to be possible this presupposition must hold in the universe at large.

II.

It must be obvious, from this survey of the results of the past, what our problem is. And while the inquiry did not start from the assumptions of science, it must be a matter of more than curious coincidence that the metaphysical needs and the scientific needs point in the same direction, even though the former set a much more comprehensive and articulate programme. Applying the pragmatic criterion, that we must assume only such realities as can make a real difference to our reflective procedure, we must try to make clear what are the ultimate types of differences which reality makes to our reflective conduct, or, expressed in subjective terms, what ways of taking or evaluating our world prove finally effective in our understanding and appreciation of it. Such types of conduct we will call by the classic name of attributes. I will now try, in brief, to define these attributes—the *summa genera* in the reflective evaluation of the character of our world.

"BEING."

First a word about the attribute of "being," as it has been called since Parmenides. By "being" we mean the stuff character of reality. This stuff is capable of making definite differences under stateable conditions. This dynamic continuity of stuff, with its equivalences, we call energy. The stuff that has been emphasised by modern idealism is meaning stuff—our reflective purposes. These constitute one type of stuff, and must be taken account of as of final importance for our appreciating and understanding the world. They enable us to differentiate the processes and spread them out in series. Similarity, difference, causality, reciprocity, etc., as general categories or modes of functioning on the part of

the reflective ego, must be part of this account of stuff. This reflective stuff is partly content stuff, partly tendency stuff, which makes the particular content significant.

I want to point out, however, that in order to make a difference to experience, reality need not necessarily be reflective. On the contrary, reflective experience will be seen to be dependent to a large extent upon non-reflective processes. The meaning of the object reflected upon depends largely upon its unnoticed background. There are three ways in which attention may be dependent upon unnoticed facts. Thus processes, not attended to, make up the larger associative context, the background of feeling and tendency, of the object. The different meaning of man or evolution to the scientist and to the common man is largely in the "fringe". Or the unnoticed may be instrumental to the activity of attention without itself being attended to. For example, the words on the page that we read. We have a different consciousness when we are attending to the meaning of the words from what we have when we make the words themselves the object. There may be processes, however, which are entirely irrelevant to the purposive consciousness of the moment, as well as unnoticed by it. Thus the pressure of our clothes, the furniture of the room, the temperature, etc., even though not attended to, make a difference to our consciousness which we can easily see by an alteration of these processes. We have a very different consciousness in reading a book out of doors under the open sky from what we have in reading the same book in our own study, though in either case we may not be attending to the setting. If we want one name for all these various unnoticed mental processes I would suggest subattentive,¹ instead of subconscious, which at best is misleading.

Not only are there mental processes beyond the circle of reflective thought and making a difference to it; there are processes which we cannot speak of as conscious experience at all, which still make a difference to our reflective meaning. That I can take up to-day the problems of yesterday or last year and thus connect again with my own past, seems to be dependent upon a continuity of processes which are not themselves conscious. The unity of the passing thought can account for the continuity of our consciousness only while we are conscious. It cannot bridge over the gap between going to sleep and waking up again, or account for

¹ This term was suggested in the article in the *Jour. Phil. Psych.*, and *Sci. Meth.*, 1907. It has later been advocated by Dr. Marshall in the same journal, but the term subconscious seems to have come to stay.

the bringing back of experiences which have not been active in the meantime. What these non-conscious processes are in their own character must be determined by science according to its convenience. It must simplify them and differentiate them according to our needs in meeting the complexity of our world. Mere *a priori* classification can count for nothing.

One thing is certain, and that is the close relation between what we call physical energy and our mental activities. It is a commonplace that a cup of hot coffee may change our emotional attitude towards the world. But I suppose we would not on that account be guilty of speaking of coffee as emotion stuff. Psychotherapy, again, has made us familiar with the differences that mental processes can make to the physiological. We have gotten over the notion that one process in order to make a difference to another must be of the same kind. Chemical energy is not the same as electrical, though capable of making a difference to it. So different are the conceptual tools which we need in each case that electrical energy is sometimes spoken of as immaterial. This, I take it, only signifies that the conception of mass is inapplicable. The difficulty of finding a common denominator between psychic processes and physiological seems still greater, yet they are clearly interdependent. All we can hope to do in science, and science must here be our last word, is to show definitely the conditions under which the transformations take place. The how of the process, the following of the minute internal transitions, may for ever lie beyond us.

Looking at the stuff character with reference to the implications of the reflective moment, we have found it convenient to look at it as of three levels. These levels can be seen in a cross section, as it were, of every reflective moment, the reflective consciousness showing its dependence upon marginal or unnoticed experience and this again upon processes to which the category of experience cannot be ascribed, and which, for want of a better term, we speak of as physical.

Stuff has the advantage that it can be observed directly. It is an object of immediate perception and judgment. The other attributes of which we shall speak, *viz.*, space, time, consciousness and form can only be observed or make a difference to our judgment through the difference they make to the stuff structure of the world, including our own purposes.

I shall speak of these attributes as non-being attributes, not because they are less real, but because they are not stateable as stuff. In the language of philosophy the stuff

character has appropriated the term "being". These non-being attributes can be defined or differentiated from each other by the difference which they make to the active purposes of the self.

TIME.

It has been customary since Kant to deal with the time and space attributes as series and therefore to insist upon their ideal character. I have insisted, on the other hand, that the serial character is relative, and that the real differentia of these concepts must be found in characters of reality which are not themselves serial, but furnish the rationale of the serial construction. If you speak of time and space, for example, as pure quantity, there remains, as we have already pointed out, the problem of stating the relation of time and space to the general concept of quantity, on the one hand, and to show their differentia with reference to each other, on the other hand; that is, the whole problem of definition remains. In what, in other words, lies the difference in our purposive attitude in evaluating space and time?

To speak first of time. What difference does time make to the realisation of our purposes? Energy, we have seen, stands for constancy of process—for stable types of prediction. And there is a degree of constancy of stuff or we could not have science. But, on the other hand, it is a characteristic of our concrete world that it does not stay as it is. We must recognise fleetingness—growth and decay in much of reality. Constancy, in our practical experience, seems at best relative. Hence we must recognise the attribute of time. It is precisely because the universe is in perpetual flux, that the task of science—the singling out of certain leading identities which enable us to find our way amidst the ever novel and different—becomes so significant. In the frozen block-world of Parmenides we should have no need of science. The constancy aspect is limited by the flux aspect. And while we must recognise the former as real, it seems but meagre in extent beside the flowing world of protean detail.

While, again, it is convenient, for certain abstract purposes of description, to reduce time to quantity, this must not blind us to the nature of the processes which we intend and from whose essential character we have abstracted for the partial purpose. I insist that what we mean by the differences time makes to our purposes is not stateable as mere *units* of chronology—the intervals of the clock. There must be flow,

movement, or we would not go to the trouble of inventing units. This movement, even in the measurement of time, ever belies our static definitions.¹ Suppose that nothing really happened—no running down of energy, no being born or growing old, no change in values. In such a world we should indeed declare time to be no more, to make no real difference. Or rather we should have no concept of time at all. What makes time real to us is that it necessitates new judgments, whether because of transformation and novelty in the purposive meaning which evaluates or in the object which is evaluated. So long as this is the case we cannot express reality in merely static categories. Our quantitative devices are instruments to adjust ourselves to this concrete flow.

It matters not, for this purpose, how you ultimately conceive the stuff of the world. You may conceive the process as the rearrangement of physical entities. Even then you must have something besides the bits and their position to account for the process of the perceptual world. I do not see, myself, how the bits can be indifferent to the rearrangement they must suffer, except as they are recognised as merely our conceptual models. But whether you conceive the stuff of reality in the last analysis as atoms and electrons or as purposive systems of meanings, the question remains: When you have thus conceived reality, why should it slip away? Why does it not remain chained in the present, as Parmenides would say? Why should there be rearrangement, whether a running up or a running down process? As the world has no beginning, neither process can be absolute, for then the world must have run its course countless ages ago. The theory that the world tends to an equilibrium or an equal distribution of heat, as implied in Spencer's formula and the second law of thermodynamics, presupposes a finite creation of the world.

If you say, again, that the present rearrangement is the result of previous rearrangement, and so on *ad infinitum*, why should there be rearrangement at all? Why should not our positional values remain fixed? Why should something creep into our equations, whether subjectively or objectively, so as to make them false? If you insist that reality remains fixed, there at least remains the appearance of rearrangement in the subject, and that is part of reality and must be met.

Given, on the other hand, time, as a real character of the world, you can account for the transformation of values, the

¹ See "Time and Reality," *Psych. Rev. Mon. Series*, Macmillan, 1904, pp. 23 and 24.

instability of positions or the falsifying of our judgments, which is what it all amounts to in the end. You can also furnish the rationale for our serial construction to meet such a character of the world, while you cannot derive the time character from the concept of series. The construction of time infinities is a secondary affair, and can neither explain nor invalidate the real time character. We should not say that things move in time. This is putting the cart before the horse. Our serial construction is made necessary, on the other hand, because of the transformation of our facts and values. Time furnishes the limiting value of certain serial constructions, such as past and future without which they would be meaningless.

It is inverting the real situation to speak of contents as carried over from one moment to another or as passing in and out of time. What really takes place is that some contents remain constant, others come and go. Our psychological moments chase each other and fade like the shadows on the mountains on a cloudy day, yet withal some constancy of outline—of tendency and content—remains by means of which we can realise their fading and fleeting existence. The more permanent contents furnish the background upon which the fleeting ones appear and disappear. Some of the latter observe a certain rhythm. In the case of the earth clock, and our artificial time-pieces based upon it, we have socialised this rhythm, relative though this is in the end to the process. Then we use this rhythm to measure the enduring contents, with their passing or accumulating increments. Having invented intervals we can divide these at will, even to infinity. We then invert the process and imagine that the contents run through our artificial divisions. The latter, however, have no effect on the real overlapping or change. They are an after-thought.

SPACE.

And now a word about space. If time makes the difference of transformation to our concrete realities, space conditions translation. If time makes an intrinsic difference to our processes, space makes an external difference. The character of space, in other words, is such that it does not interfere with movement. If space offered resistance, geometry, which is based on *free mobility*, would be impossible. It matters not for our purposes whether space be actually empty or not. It is convenient, for scientific and practical purposes, to posit space as a limit of exhaustion and as the absence of resistance,

i.e., to assume a space zero. Only thus can we state Newton's first law of motion. Moreover, if we can approximate to such a limit, it must be as objectively real as though we had actually attained it.

We cannot rule out space by mere *a priori* considerations. Thought must follow the facts and not dictate to them. Whatever we must acknowledge as real cannot fail to be conceivable. And pure space seems to be more than a conceptual limit. Interstellar space seems to be practically pure. The rays of light are, so far as we know, not interfered with in any way until they strike solid bodies. Michelsen's careful measurements indicate that the earth rotates as though it moved in empty space. What is true in the large may be equally true in the minute. Thus the compressibility of the atom as indicated by the experiments of T. W. Richards seems to point to space intervals in the elementary structure of the universe. Whether such observations as regards the existence of pure space prove final or not, this does not invalidate the reality of space as the condition of the energetic interactions in space.

A more positive characteristic of space than that of free mobility is that of *distance* or externality of energetic centres. As distance, space conditions the equations of the astronomer and the realisation of our human social purposes. For even though our purposes do not occupy space, they nevertheless operate in space and space makes a difference to their realisation. If from Kansas I wish to communicate with a friend across the sea, it makes a definite difference as regards the kind of communication and the sort of relations that are possible between us, that he is some thousands of miles away.

Spatial distance does not of course prevent energetic overlapping of centres. In the case of my friend it is true that my purpose to communicate may become continuous with certain physiological processes, and these in turn may become continuous with certain physical energies which in turn span the distance between me and my friend. But the overlapping is different and the realisation of the social purpose is different because of the distance. No mystical monism can remedy this difference. No mere intellectual change of point of view can alter the practical situation in which space figures as one condition.

We must, of course, be careful not to confuse the real space condition with our psychological or logical perspectives with their ideal distinctness or externality of parts. *Things* cannot move in an *ideal* system. Serial space is a construction—an after-picture to symbolise the relations of

things, whether physical masses or geometrical figures or self-conscious individuals, in zero space. If space were merely an ideal system, distance and free mobility would both be figurative without any reality for the figure. If we admit a real zero space, we can easily account for phenomenal or serial space, but not *vice versa*.

I grant cheerfully that all our quantitative measurements are relative. Our serial constructions, our geometrical as our chronological models, are our tools by means of which we strive to meet the actual nature of the world. But I do not see how any mere contradictions in our concepts can rid us of characters of reality which condition all our real purposes, whether as regards transformation or translation.

CONSCIOUSNESS.

It is convenient to treat consciousness, in the sense of awareness or interest, as a unique attribute. It is absurd to suppose that our conative attitudes and organised meanings become atoms and molecules when we are not aware of them; they change, not in stuff but in value when they are illumined for an instant by interest. Consciousness is a new character added to our conative purposes under certain conditions of intensity and readjustment. The conative purposes themselves may remain as constant as individual existence. They may even become permanent parts of social history.

Consciousness or awareness is a neutral light. It does not create distance nor does it create meaning. It may be an awareness of meaning or an awareness of sensation. In our developed experience it is both. It gives subjective and unique value to facts and their relations. To make such awareness possible, there must pre-exist, as conditions, on the one hand, the object-context of which we become aware, and on the other hand, the system of conative tendency which forms the subjective condition of awareness. But neither the object-context nor the system of tendency is as such awareness. When interest is lighted, under its peculiar conditions, a new relationship to the organism originates which cannot be reduced into other existential relations such as temporal, spatial, causal, nor into logical or æsthetic relations, though these now come to have subjective value.

Consciousness thus conditions the relation of being felt. It converts what otherwise would be a type of mere interaction into realisation. What is realised may be an external meaning—a proposition in Euclid. It may be an electrical shock. It may be a relation such as distance. What is

realised need not be experience stuff. It includes not merely experience transition, but space transition. It may be any kind of energy or relation. On the other hand, a meaning may be as objective or external to consciousness as space. We do not make Homer's meaning or the Sistine Madonna, when we become conscious of it, any more than we make the distance from the earth to the moon when we take account of it. Consciousness in any case is a gift which for its condition presupposes on the one hand conative tendency, on the other hand the shock of a stimulus—a situation to be met whether intra- or extra-organic. A mere continuity or succession of objects is not a consciousness of a continuity or succession. Awakened tendency, or interest, is also required. And then the content may come in temporally discrete pulses of experience.

Thus in being conscious there are always end-terms; and one of the end-terms must be a conative system of tendencies. The terms need not be a logical subject and object, though the exchangeable character of the end-terms in this case does not prevent them from being, in the particular situation, real end-terms, whichever term the conative interest may be momentarily identified with. The end-terms may even be blind instinct on the one hand, and any fascinating stimulus on the other. But one of the end-terms is always conative in character. Consciousness is always *interest*.

Consciousness has been confused on the one hand with its conditions, on the other with its species. It has, in the first case, been regarded, as by the materialist, as a product or effect of chemico-biological causes. But the materialist himself has admitted that it is not comparable with what is ordinarily meant by effect. It is rather an epiphenomenon—a miracle added to the process, without making any causal difference to it. On the other hand, we may with the idealist regard this awareness as everywhere and always present and indissociable from the contents of reality. But here we are dealing with an assumption which seems to run counter to the facts as known in our finite experience. I prefer a third alternative, which indeed is implied in the bankruptcy of the other two, in accounting for our experience. This is that consciousness is an attribute added to our energetic relation of conative tendency and stimulus under certain conditions—a unique gift of reality in its larger sense to some of the interactions of our finite ego. Since obeying regular laws it is no miracle; since an aspect of all our waking experience, it is no more mysterious than other unique types of reality such as space. Whether it is an abstract attribute of the

universe or is ever-present as an aspect of a comprehensive absolute experience does not matter for the problem in question. In either case, what is a gift to our finite experience pre-exists as a character of a larger reality. This character of awareness spans the whole field of interest from the immediate interest of instinctive attention, where we have the "mere awareness of," to that of the most elaborate apperception or "knowledge about".

In the second place, consciousness has been confused with the species of its content. It has sometimes been treated as though it meant exclusively logical awareness, to the ruling out of non-logical types. Again it has been treated as though it signifies simply motor awareness, as opposed to ideational. But the stating of such definitions is a sufficient refutation of them. The awareness itself is quite colourless. It is the psychological processes which colour it; and here there is no reason why one process should be given the pre-eminence over the rest.

FORM.

I anticipate the most difficulty from the fifth attribute of which I am going to speak, *viz.*, form or direction. We have tried so far to state the universe in terms of four attributes, those of stuff or energy, time, space and consciousness. But none of these attributes answer the question: Does the process have direction, or is there validity in the flux? This is not accounted for by stuff, for the stuff character does not contain its own measure. It is precisely because we recognise that the process is not what it ought to be, because our finite structures seem relative, that the question of validity is raised. The question is not answerable in terms of time, for time merely means transformation. Whether transformation towards chaos or towards unity is not answered by time. It is not stateable as space, for while space conditions the realisation of meaning, it does not make it valid. You cannot reduce the demand for form to mere mechanical sequence, whether psychical or physical, conscious or unconscious. There remains somehow within us the longing for finality, in spite of, yea because of, the fragmentariness of our finite meaning. The merely relative fails to satisfy us.

Valid relations are a distinct type or genus from consciousness with the motley array of existences which it reveals. In the first place, our awareness may be bound up with error and illusion. That it largely is so in our experience is attested by the whole story of science. In the second

place, valid relations may exist without our being conscious of them. We do not originate Euclidian geometry by becoming aware of its logical relations. While valid relations presuppose mind and also awareness at some time, we do not have to be awake all the time to keep the argument valid. And the long buried past, when once brought to consciousness sometimes is found to be more valid than our present cogitations.

Validity implies a constitution, different from the sequential or causal, in the light of which we criticise that which happens and strive to establish clearness and distinctness in the midst of the seemingly confused relations of experience. This idealisation of life, this attempt to establish the ought in what is, must be taken as a unique type of evaluation. When we insist that there ought to be truth, beauty and goodness, in spite of the relativity of history and our individual judgments, we have at least implied a limit, a direction of history which is not relative. Else all our judgments would be equally meaningless, and there could be no degrees of worth, as in the dark all cows are grey.

The absolute idealist insists that in the absolute experience we have such a standard. This absolute experience is even now shared by us. It is this that gives rise to our consciousness of fragmentariness, which accounts for our finite sense of failure, and of which we are even now conscious as the final truth, the purpose eternally fulfilled. But the irony of history gives the lie to any such assumption. The absolute itself, as our concept, is subject to the transmutation of time. It is the expression of the finite now. Each stage of the process must create its own absolute, find its own satisfaction. The absolute, therefore, is for us at any rate merely a logical ideal. Epistemologically, it is relative. The concept of it, too, presupposes direction for such validity as it has.

That the idea of direction is valuable as a regulative idea or limit, cannot be doubted. But can we also attribute ontological reality to the same? Or is it merely a hypothetical limit, the index of our ideal strivings? It seems to me, if it is required to give meaning to our relative and fragmentary purposes, that it must be at least as real as those purposes themselves. The straight line must be at least as real as the numberless variations of curvature of which it is the limit. And it is worth more, for without it there could be no such thing as measure. And so with our more general ideal demands, as contrasted with the world of existential processes.

To guarantee the validity of process or to furnish the basis for science, virtue and beauty, the form must be selective, that is, must somehow condition the survival of structures. Only thus can it satisfy that demand for finality which the finite process at any one time fails to fulfil. This does not mean that every item is predetermined by a final cause or Idea. It need only mean that, in the changes and chances of the cosmic process, in the fluctuations and mutations of life, certain ideals of clearness and distinctness are enforced by the universe, however much beyond our comprehension such operation may be. This would accomplish in the large what our selective will as a fragment and evolution of the universe strives to accomplish in the small.

That formal selection may condition survival we know from experience. Evaluation in terms of ideals is an important condition in social survival. Human beings are socially approved, not so much for their size, weight or strength, as for their satisfying certain ethical, æsthetic and intellectual standards. They may, for example, be selected for their beauty rather than their strength and thus continue the race. This holds to a certain extent in animal selection as well. And in the survival of plant life and even of certain conditions of inorganic nature—the configurations of hills and valleys within our human control—form often plays the most important part in our selection. If the universe is interpenetrated and controlled in the last analysis by a master mind—the fulfilment of our ideal demands—formal value, rather than quantity of energy, may be the final basis of survival and eternity.

These attributes, while they are ultimate or irreducible kinds, differ from the parallelistic attributes of Spinoza in that they all make a difference to our creative purposes, whether they make any differences to each other or not. Hence they do not involve an epistemological contradiction. They at least overlap *as known*. They also overlap in other ways. Space makes a definite difference to interacting energies in space. Time again conditions the existence of process at all, instead of the petrified world we otherwise should have. Consciousness makes subjective realisation of a world possible, while form makes it possible to understand and appreciate such a world.

V.—DISCUSSIONS.

ANALYSIS OF CATEGORICAL PROPOSITIONS.

I.

I SHOULD like to be allowed to make a few remarks on Mr. Broad's reference to my view of the analysis of *S is P* propositions in his interesting notice in MIND, N.S. 82, of the *Proceedings of the Aristotelian Society*, 1910-1911. Mr. Broad remarks that on my view "the phrase 'identity of denotation' must be taken to mean that some part and it may be all of the denotation of one term is identical with some part and it may be all of that of the other". What I hold is, that in *S is P*, S and P (whatever they stand for—e.g. *All R (Some R)*, *Some Q*) are the *Terms*, and that S and P are in all cases precisely identical in denotation. *S is P* may be

diagrammed by  But to *Term-names*—in this case R

and Q—I could apply exactly what I have quoted from Mr. Broad. What this really expresses is the demand for identity of denotation that is conveyed in the familiar requirement that the Middle 'Term' must be 'distributed'.

In support of my analysis of *S is P*, as against Mr. Russell's objection, Mr. Broad is of opinion that to say that in the assertion: Scott is the Author of *Waverley*, the object denoted by 'Scott' is identical with the object denoted by 'the Author of *Waverley*', does not involve direct acquaintance with the object called 'Scott'.

He thinks, however, that I have not met two independent objections urged by Mr. Russell against my analysis: (1) that some 'descriptive phrases' such as *the round square* have no denotation; (2) that the analysis leads to a vicious infinite regress.

In answer to (1) I would once more urge that unless a name applies to something (and that is what I understand by denotation) it cannot be used in assertion—and unless it has intension, one name will serve as well as another, it does not matter which we use.

With reference to Mr. Broad's suggestion that the phrase 'round square' is as destitute of 'subjective intension' as of 'denotation,' this seems to be true. The hindrance to thought here is

similar to that which we encounter in terms of the form *A-not-A*, and propositions of the form *A is not-A*. Yet we do sometimes reckon these contradictory locutions as terms and propositions respectively, and *A is not-A* is in the form *S is P* and may, so far, be analysed as an identity of denotation with diversity of intension. Something more than this however is wanted, and it is I think to be found on the line of thought indicated by Prof. Stout in his article on *The Object of Thought and Real Being* in the *Proceedings of the Aristotelian Society* for 1910-1911. He says (p. 193) that "the relativity of possible alternatives to variable generalities seems to supply a key to the difficult problem how impossibilities, as such, can be objects of consciousness. It would seem that an impossibility can be thought of only because, from another point of view, it is a possibility. We may take, as a crucial case, the formulation of the law of contradiction. In one sense, we cannot apprehend the union of two contradictory propositions in a single proposition; for it is in the act of failing to do this that we become aware of the law of contradiction as self-evident. On the other hand, if we could not think of the union of contradictory propositions at all, we could never recognise it as an impossibility. The solution of the difficulty seems to be this: The general character of the propositions, considered merely as propositions, leaves open the alternative possibility of their being combined or not combined. Hence, from this point of view, we can think of their union as a possible alternative. It is only when we go on to develop our thought in the attempt to bring before the mind the special form which this alternative would assume under the special conditions, that we find our path barred."

I may perhaps compare with this the following sentence from an article of my own in MIND:—

"I should . . . say that in order to predicate non-existence in one sphere it is necessary to postulate existence in another. If I say: (1) Dragons are non-existent, or (2) Round-squares are impossible, I do of course mean to imply the *non-existence* and *impossibility* of Dragons and Round-squares respectively—but it is non-existence and impossibility in a certain region that is neither all-embracing nor even that to which I primarily refer. Unless I refer to *something*, existent somehow, in *some* region, what is it of which I predicate non-existence or impossibility (within a given region), what is it which I exclude from those regions to which 'non-existent' and 'impossible' refer? If a thing is non-existent everywhere, what does the exclusion of it from a given region mean?" (MIND, 1893, p. 454).

In: The existent round square does not exist, we are referring to two regions or orders of possibility or existence which do not coincide. A round square must 'exist' after some fashion in order to be an object of thought, but it has not the more specific possibility of being actualised in space which we are accustomed to assign to

geometrical figures. In : The existent square inscribed in a circle is existent, the two possibilities (the vaguer and the narrower) do coincide.

With regard to objection (2) the possibility of an "infinite regress" seems to be an absolutely necessary condition of any general analysis of *S is P* propositions because that analysis itself can be expressed and applied endlessly. My point is that every proposition of form *S is P* can be analysed in a certain way. It is not a valid objection to this to say that a Categorical, complicated by unnecessary repetitions of the analysis but still Categorical, remains amenable to the analysis. The analysis would not be general unless this were so.

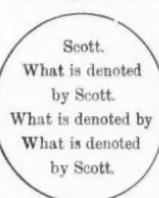
If I say that the import of, e.g. Scott is the Author of *Waverley*, is to assert identity of denotation with diversity of intension, I can of course also say that : What is denoted by what is denoted by Scott, is identical with what is denoted by what is denoted by Author of *Waverley*. As Mr. Broad suggests, the repetition in Subject and Predicate is ineffective, and

- (1) Scott.
 - (2) What is denoted by *Scott*.
 - (3) What is denoted by *What is denoted by Scott* have all three the same identical denotation.
- (1) Scott is the Author of *Waverley*.
 If my analysis (as far as denotation is concerned) is applied to this, we get :—
 (2) What is denoted by 'Scott' is identical with what is denoted by 'Author of *Waverley*'.

If the same analysis is applied to (2) we have :—
 (3) What is denoted by *What is denoted by 'Scott'* is identical with what is denoted by *what is denoted by 'Author of Waverley'*, and so on. We have simply a repetition, for each successive more complicated proposition, of the analysis adopted.

I think that a regress equally 'infinite,' equally inevitable, equally innocuous, equally useless, would emerge in the case of any propositional analysis treated in the same way—e.g., Mill's, according to which "Whatever has the attributes connoted by the Subject has the attributes connoted by the Predicate," or Hobbes's, according to which "The Predicate is a name of the same thing (or things) of which the Subject is a name".

Both of these come very near my analysis. The only difference between Mill's (What has the connotation of the Subject is what has the connotation of the Predicate) and mine is, that Mill's has a rather narrower application—that is, it applies to Universal affirmative Categoricals, which have general names for both Subject-name and Predicate-name. If Intension is substituted for Connotation, it is my analysis—for in all *S is P* propositions *S* and *P* are not intensionally the same, and any term used in a



proposition, if it is to express or convey any meaning at all, must have *some* Intension.

[According to Hobbes, the Subject and Predicate in any proposition are names of the *same thing*, i.e. they have the *same* denotation or application, and if these names have even the minimum of difference in Intension (which they must have unless the proposition is of the form *A is A*) then again the analysis coincides with mine—there is Diversity of Intension with Identity of Denotation. It would seem too that in defining a Synthetic Proposition in which both S and P are connotative, the acceptance of my analysis is unavoidable.

II.

Perhaps I may take this as an opportunity of referring also to Dr. Bosanquet's Note (in the second edition of his *Logic*) on my analysis of *S is P* propositions, and the suggestion that this analysis should be regarded as a new 'Law of Thought,' a law of Significant Assertion. Dr. Bosanquet says: "The substitution of *S* is *P*, as the general formula of thinking, for *A* is *A*, which, taken as such a formula, is meaningless, will I hope be adopted by logical theory and practice. By dealing with a difficulty which so great a logician as Lotze could not overcome, the suggestion shows itself to possess a considerable value." But Dr. Bosanquet has fault to find with the view that what is asserted by propositions of form *S is P* is "difference of Intension along with Identity of Extension". Apparently however he would agree with Mr. Bradley, by whom (he says) "the same analysis has been repeatedly urged *totidem verbis* . . . but with restrictions".

It is certainly the case that Mr. Bradley has statements which seem to me exactly to express my view, but (1) according to Dr. Bosanquet this view is asserted by Mr. Bradley "with restrictions," whereas I protest against restrictions, (2) in close connexion with the statements which coincide with my analysis, Mr. Bradley has other statements on the subject with which I find it impossible to agree, e.g. on page 167 of *The Principles of Logic* he says: "We may briefly sum up the matter thus. The only way to read the *whole* judgment in extension is to take it as asserting a relation of identity between *different individuals*. *Two individuals*¹ are one though their attributes differ." And on page 29 (the other page of Mr. Bradley's book to which Dr. Bosanquet refers) it is said that "all judgment is the attribution of an ideal content to reality . . . thus in 'A precedes B' this whole relation *A-B* is the predicate, and, in saying this is true, we treat it as an adjective of the real world . . . the reality to which the adjective *A-B* is referred is the subject of *A-B*, and is the identity which underlies this synthesis

¹ Italics mine.

of differences." Each of these quotations gives an account of *A is B* propositions which differs importantly from my analysis.

The story from Thackeray in Dr. Bosanquet's *Essentials of Logic* (p. 140) to which he here refers, tells, it seems to me, entirely in favour of my analysis. In this case, as Dr. Bosanquet remarks, "the inference depends solely on individual identity".

When Dr. Bosanquet says "That one intension can be—involve or imply—another is a possibility which, as I understand, Miss Jones absolutely and in principle denies (cp. however p. 46 of her work)," I would observe (1) that though I do not take *be* as equivalent to *involve* or *imply*, and do not think that one intension can *be* another, I believe firmly that one intension may *involve* or *imply* another, and I have stated this emphatically in, e.g., the chapter on Induction in my *Primer of Logic*. For instance, I say on page 74 "in all these Methods, uniformity of causation involves uniformity of co-existence. If we have seen one animal dosed with arsenic and subsequently die, and hence conclude that another animal called by the same name, and dosed with an equal amount of arsenic, will die, is not our inference based upon the assumption of a certain constant coinherence of characteristics, both in the animal and in the poison—a coinherence of such a kind that when the two subjects are so collocated as to act upon each other, a result similar to that produced in the first case will be produced in the second also? If the properties of this arsenic are different from those of the other, or if the second animal, though looking like the first, has a different internal constitution, there is no reason why death should result (cp. Mill, *Logic*, book iii., chap. xxii., § 2). This sort of uniformity—a uniformity primarily of co-existence—it is which we look for, and of which we constantly discover fresh cases, these enabling us to predict that if Subjects having certain characteristics are collocated, certain changes in them will take place. Laws of *Succession* in events seem thus to depend upon laws of *Co-existence* of characteristics in Subjects. On the other hand, we cannot predict new collocations of Subjects of Attributes.

It might be argued, further, that not only is every characteristic invariably accompanied by a certain other characteristic, as Bacon surmised, but also that every kind of characteristic is one of a unique group with which it is invariably and inseparably connected. We certainly act as if we believed this; from the perception of a mere odour, we infer unhesitatingly the neighbourhood of roses, or jessamine, or lavender, of coffee or tea, hay, ripening corn, freshly fallen snow, or a beanfield; from a mere vocal sound we infer the neighbourhood of a man or woman, or child, or bird, or dog—or even a particular individual in a particular mood. A mere touch or taste will enable us fully to describe objects of a familiar kind: the mere view of a thing will enable us to say what it is called, what other characteristics it possesses, how it will behave under a great variety of circumstances. For instance, if I see an

object looking exactly like what I am accustomed to call a squirrel, sitting on the top bar of a stile, or on a branch, I unhesitatingly say that it is a squirrel, and infer that if I startle it, it will escape with the kind of movement common to squirrels; that if I shoot it and examine its structure, I shall find it to have a backbone, a brain, etc. No two things are alike only in visual appearance, or only in smell, or only in taste, and so on. From one bone a whole skeleton may be made out, from one specially modified symptom the whole diagnosis of a disease." I have said on my page 46, to which Dr. Bosanquet refers, that "the identity-in-diversity analysis offers no obstacle to the view that the intension of the Predicate is inseparable from that of the Subject. . . . In fact the inseparability of the intension of P from that of S quite inevitably involves *identity of denotation*." The only way in which intensions can appear as inseparable is by always having one and the same identical denotation. But we sometimes find intensions conjoined which we do not *know* to be inseparable.

I think it is probable that, as Dr. Bosanquet says, "conjunction covers connexion" always (*cp. my Primer of Logic*, p. 74), but we do not always see or know that it does. But whenever we say *S is P*, we do assert a conjunction of the intensions of S and P in



and certainly whenever *S is P* is a Universal Proposition,

we are aware that the assertion of denotational coincidence of Subject and Predicate can only be made in reliance on a universal connexion of the intension of S with the intension of P.

I of course recognise Intensional Sameness, Oneness, Unity, though I am anxious to keep the term *Identity* for *Denotational One-ness*. Also I believe that a certain intensional one-ness underlies the intensional diversity of S and P both in *S is P* and in *S is not P*.—I should wish to disclaim the inference which Dr. Bosanquet draws from the rather hasty and unguarded passage in a bracket on pages 41-42 of my *New Law of Thought* to which he refers.

E. E. C. JONES.

THE 'WORKING' OF TRUTHS AND THEIR 'CRITERION'.

MISS STEBBING¹ is indeed a formidable antagonist. She refuses to take my word for it that I know what my doctrines mean, and insists that I must mean something nonsensical which she has read into an *obiter dictum* of James. And rather than admit that she has made a mistake, she accuses me of inconsistency. It is not, therefore, easy to argue with her. But as her misconceptions are widespread, and continue to be assumed, without misgiving or sense of impropriety, by eminent philosophers,² I must make another attempt to remove them.

(1) I will begin by pointing out that Miss Stebbing has not, so far, gone any way towards proving that the convertibility of 'truth' and 'working' is essential to pragmatism, either by her examples or by her arguments. Her first example proved nothing, as she now admits by implication (p. 250). Her defence of the second (pp. 250-251) strikes me as bold, but neither judicious nor logical. She urges that though it did not profess to be James's own doctrine, but only his condensation of mine, yet James had on a previous page said his doctrine was identical with mine, and that therefore it did not seem to her 'essential' to distinguish them—even after I had expressly repudiated the sense she had put upon it. Let us consider how this looks when we substitute neutral symbols for pragmatists capable of any logical atrocity. Is it not very risky to accuse A of an error B is supposed to have committed, because

¹ Cf. No. 86., p. 250, and No. 83, p. 471. I need hardly say how much I regret my failure in No. 84 to detect her sex, and that of the Editor to correct me.

² It is instructive to compare Prof. Alexander in the same number, pp. 182-183. He agrees with Miss Stebbing that pragmatism may be reduced to the formula that "truth is true because it works," and so in ignoring the controversial significance of the demand for a testing of alleged 'truths' (*v. below sub (4) c*), but differs from her radically in holding that "what works practically may be regarded (if the proposition is fenced by proper safeguards) as true. But we cannot say that everything which is true works practically." *I.e.* he *denies* (what Miss Stebbing admits) that 'all truths work,' but admits (what I contend), *viz.*, that until certain 'workings' are allowed for, it cannot be asserted that 'all that works is true'. It would be interesting to learn what authority Prof. Alexander claims for his interpretation of pragmatism. He can hardly have extracted it from me, seeing that it exactly inverts my contention. He must, therefore, have got it from James, and, if so, differs decisively in his reading of James from Miss Stebbing.

A has once made a general remark that he agrees with B? But what shall be said of the imprudence of insisting, on the strength of this, that A has committed the error, when B positively denies that he himself has committed it? Is A's assertion about B's meaning to stand against B's own, and a brief summary of B's works against the actual text? Moreover is not the inference utterly unwarranted in logic, even on the facts alleged? A has written a passage C about his friend B's doctrine. Both are thereupon charged with holding the doctrine D, because A has somewhere said that his doctrine and B's were 'identical' (absolutely, or with a difference?). But B denies both that he holds the doctrine D and that the passage C contains it. Does it not follow that *neither* A nor B can hold it, and that *both* must be acquitted?

(2) Of course Miss Stebbing may think I am equivocating, and say I do not know either my own mind or my own writings when I deny that I have anywhere alleged or assumed the convertibility of 'truth' and 'working'. But she must permit me to say that she has not made good her claim to be a better authority on what I mean than I am myself, nor to possess psychological infallibility as a mind-reader. In token whereof I may point out that she is no less mistaken in her inferences from the incriminated passage than in her citation. She argues that "it is surely evident that Dr. Schiller thinks they (truths) are attained by 'working,' and are true *because* they work," and that I get at my notion of "the essence of truth" in this way.

In reply I deny both her facts, and the logical significance she attributes to them. It is not true that I derive the essence of truth from its working (*cf. infra sub* (3)). It is not true that because I think that our current 'truths' have (mostly) been reached by experience of their working, I must hold that whatever works is true (*in her* sense, *i.e.* immutably); nor does this follow from my holding that a truth is 'true *because* it works'. This last phrase I can admit without damage to my position or inconsistency, because its intention is merely to *deny* that truth-claims which do not work are true at all. It does not, therefore, mean the same thing for me as for her. To Miss Stebbing it seems to involve the convertibility of 'truth' and 'working,' because she has assumed that 'consequence' and 'ground' 'reciprocate,' and also because she has (probably unconsciously) taken true in an 'absolute' sense; but a little reflection, or a little study of pragmatist logic, should convince any one that both these assumptions are pragmatically inadmissible.

In the first place, it is clear that as working admits of quantitative differences and is a question of more or less, 'truth' also must have a quantitative aspect, and the difference between it and 'error' cannot be absolute. Hence the connexion between a working A and a truth (claim) B which it supports can never be

an exclusive one. It must always be necessary to consider also whether the observed working would not fit in as well or better with truth-claim C, and often whether the working D connected with truth-claim E should not prevail over A, and be judged 'truer' because more important. Secondly, Miss Stebbing does not appear to be aware that no amount of 'working,' 'validation,' verification, or 'confirmation,' can ever prove the truth of anything in *her* sense, *i.e.* absolutely. For no hypothesis, however strenuously and well it worked, can ever become a 'formally valid' and 'absolute' truth in this way; the method is unavoidably based on the formal fallacy of 'affirming the Consequent,' and it can never be validly inferred from the fact that a theory works that it is therefore 'true' (absolutely). Hence it is an inevitable corollary of the belief in absolute truth that absolute truth cannot find lodgment in a human mind, nor be attained by way of human science.

But it was precisely our perception of this logical *impasse* that led us to reject the notion of absolute truth with all its appurtenances. It seemed to us to end in a *reductio ad absurdum*, and in a gratuitous plunge into scepticism.¹ We were led, therefore, to examine how in fact belief in the accepted 'truths' grew up. We found that this involved many interesting psychical processes, which had been ignored in all the extant theories of knowledge and gave the lie to many of their pet assumptions. We found, *e.g.*, that every thought was essentially a *personal experiment* that might succeed or fail, and that whether it did the one or the other depended on its consequences. But it seemed clear that 'true' was the term appropriated by language to the success as 'false' was to failure, of such experiments. Hence 'truth' and 'error' were conceived by me as being essentially *valuations*.

Of course both 'success' and 'truth' are relative terms, both on account of their genesis and on account of their connexion. Absolute 'success' is found as little as absolute 'truth,' and for the same reason. There is no finality about either, and no need for it. All 'truths' remain (preferred) truth-claims, and retain an infinite appetite for assimilating further 'confirmation'. It is because of this infinite progressiveness that no knowledge is logically 'absolute'.

But there does come a point, alike in the individual's experience and in social opinion at any time, at which it seems that certain truth-claims have received confirmation enough to make them *pragmatically certain*. These form the reigning truths. But they never form a closed oligarchy or an immutable system. Merit can force its way into their ranks, and inefficiency entails degradation. Thus, though their position is (psychologically) unchallenged, it is never (logically) unchallengeable. So their *de facto* acceptance

¹ Cf. in the same number of MIND as Miss Stebbing, Capt. Knox, pp. 238-241. The whole article is well worth pondering by those who are not absolutely certain that they have fathomed pragmatism.

does not prove their absolute truth *de jure*, and it can not be said that because they work they are absolutely true. They are called true, because they work, and there is no sense in calling anything true for any other reason; but the progress of knowledge may nevertheless supersede them at the next step.

(3) It should be clear from the above why I can appeal to 'working' to attest the (pragmatic) 'truth' of a doctrine, without imagining that any (absolute) 'essence of truth' is being established. The whole notion of such an 'essence,' in the sense of something indefeasible and immutable, which makes a thing what it is and without which nothing can be itself, is entirely foreign to pragmatism. For us the 'essential' means merely what is important for any purpose. The old-fashioned essences do not exist, and would be useless if they did; for they would be unknowable. Objections, therefore, which assume that truth must have an essence, or that, if not, it is the duty of pragmatism to supply it with one, simply do not concern us. I can only smile at the *naïveté* of Miss Stebbing's contention that "if truths have only one property in common surely that property must be of the essence of truth, and cannot belong to anything that is not true" (p. 251, n.).

(4) Nevertheless this quotation reveals what I suspected already in my first paper (p. 535) to be the real source of her misconceptions, *viz.*, her notion of a 'criterion' of truth. A 'criterion' evidently means to her something very solemn, which pragmatism has no use for. It is not indeed anything quite so lofty as the inscrutable 'nature' of truth, but, though derivative from that, it attaches itself to everything that is true, and "cannot belong to anything that is not true". That is the only allowable definition of a genuine 'criterion,' and to inquire whether anything does in fact exist to exemplify it would be indelicate. It may however be pointed out that Miss Stebbing assumes: (a) that there is (or ought to be) a 'criterion' of this kind, or at least that it is not inconceivable; (b) that pragmatism claims to have discovered it; (c) that it wishes to 'test' truths with it; (d) that the testing it speaks of is not 'intelligible'; (e) that it fails to distinguish truth from error; and (f) that her notion of the 'nature' of truth is intelligible. I cannot but think that on all six points she is gravely mistaken.

As to (a) she admits (p. 252) that no intellectualist has produced such a criterion. All intellectualists would now I think have to admit that they have utterly failed, so far, to vindicate their faith in the existence of absolute truth by discovering any test that would discriminate it either from the 'truth' which is accepted because it has worked, or even from 'error' or 'illusion'; though many, for some inscrutable reason, appear to be quite proud of their failure to devise such a criterion. But this failure hardly seems the right premiss for the inference that therefore such a criterion must exist *in rerum natura*; on the contrary, if no one

has ever found one, and if those who thought they had have always been deluded, is it not a fair inference that the theory which demanded one was probably wrong?

(b) This, of course, is the inference which pragmatists have drawn from the situation, and is my reason for denying that we alleged a criterion in Miss Stebbing's sense. She will find it quite as difficult to quote from us for a recognition of such a 'criterion,' as for the convertibility of truth and working. For we got rid of the duty of providing an absolute criterion, when we discarded 'absolute truth'. Since then we have spoken of it only *pour rire*,¹ and not used it ourselves.

(c) What we speak of is *testing truth-claims*, and this is a very different affair from Miss Stebbing's 'criterion'. We think further that the so-called 'truths' of intellectualism are hopelessly vitiated by an all-pervasive 'ambiguity,' and that 'formally' (*i.e. verbally*) they include 'lies,' 'errors,' and in short all truth-claims, along with accepted truths. This we regard as highly inconvenient for scientific and other purposes, and we censure intellectualism for contenting itself with such formal 'truth' and for *not even attempting* to sift the 'true' (in any significant sense) from the 'false'. It seems to us that this is highly *uncritical* as well as inconvenient, and calculated to render all theorising about knowledge futile and unmeaning.

We, on the other hand, are determined to effect this sifting so far as possible, or at least are not too proud to observe how it is done. It is done by *comparing the values* of different truth-claims, and discarding the less valuable as 'false'. We note that this process goes on continuously, and that in consequence the value of the accepted 'truths' is steadily rising. Hence we attribute both 'practical' and 'theoretic' importance to this process of testing, and though it never involves any questions of 'absolute' truth or falsity, it does involve a constant purging away of more erroneous and (relatively) worthless beliefs. We are entitled, therefore, to protest against the reception into decent scientific society of any truth-claim, however 'self-evident' it may seem to its advocate, that has not undergone a modicum of testing, and we demand of it a certain record of work done. The dictum that all truths must work is therefore, in the context of our doctrine, a part of this thoroughly scientific protest. It is really *negative* in its purport, and not a positive statement at all, either about the 'nature' or about the 'essence' of truth. It simply means—'You shall not assert the "truth" of whatever suits you without any testing at all'. The *positive* facts which justify this protest are that truth-claims differ in value and that the most valuable available at any time are those called 'true'; but it is a curious habit of our critics to pass over this part of our doctrine in complete silence.

¹ Cf. Capt. Knox on Mr. Bradley's "Absolute Criterion" in MIND, No. 54, and Mr. J. W. Snellman in No. 78.

(d) I can see no reason, therefore, for regarding this testing of claims, which the pragmatic method demands, as useless because it is not final or infallible, nor as failing to distinguish practically and adequately for scientific purposes between the true and the false.

(e) Miss Stebbing's belief to the contrary seems to result wholly from her prepossessions as to the verbal meaning of a 'criterion'. She "fails to see how any property can be a criterion unless it belongs to every instance involved and to these only" and thinks that "in stating that 'working' belongs not only to all truths but also to some things that are not true, Dr. Schiller destroys its force as a criterion" (p. 252). But she fails to see also that the sort of testing I contemplate, and the sciences carry on, is necessary, and is not a whit less useful for not coming up to her definition of a criterion.

(f) Ultimately our divergence springs from difference about the 'nature' of truth. I assume that this 'nature' is knowable and may be extracted from the truth-seeking and truth-finding of human minds, and that our *a priori* prejudices must accommodate themselves to the facts of these. She assumes (for no reason that any intellectualist has ever been able to state) that there is an eternally fixed definition of 'the nature of truth,' and that no amount of experience of the discrepancies and absurdities to which in fact it leads can ever entitle us to abandon it. It is part of this definition that (real) truth is incorrigible and that "no 'truth' that requires 'further improvement' is quite 'true'" (*i.e.* absolutely). Of course it is not 'true'—in her sense! That is just the familiar fact of the non-existence of 'absolute' truth. Of course also no one can prevent her from laying down a definition of truth which condemns all humanly attainable 'truth' as false. In that she is only following in the footsteps of the eminent Absolutists who have been preaching so long that nothing short of the whole truth is wholly true, and persuading us to call this doctrine rationalism instead of scepticism. But I would put it to her that this definition of the nature of truth is highly irrational and arbitrary, and not at all 'intelligible' in the end. For why should we insist on defining 'truth' in terms that only stultify all human knowing, and render any intelligible account of its procedures impossible? Why reserve the title of 'truth' to an 'ideal' which admittedly we cannot attain, and which, as I have elsewhere shown, we have to contravene in every act of real knowing? Is it not far more rational to cut our coat according to our cloth? Why prefer to be a sceptic when you can be a pragmatist?

At any rate it is clear that the inconsistencies Miss Stebbing finds in our doctrines she has imported into them herself, by attributing to us a meaning of 'true' which it is the vital novelty of our doctrine to repudiate. This procedure is intelligible only on the supposition that she has failed to understand alike the pragmatic notion of 'truth' and the ambiguity of her own. And perhaps the

latter failure explains the former. For so long as any one rests content with a 'truth' which harbours any falsehood any one may choose to affirm, and thinks that science and life have no right to demand from logic a notion of truth they can use, why should he trouble to amend his familiar phraseology and try to grasp a new conception?

F. C. S. SCHILLER.

ON METAGEOMETRY AND THE SENSE OF DIRECTION.¹

AN interesting and continually recurring problem involved in the philosophical treatment of mathematical method is found in the controversy concerning the interpretation of the various systems of metageometry. It may, therefore, be desirable briefly to state what light is thrown on it by the application of the principles published some time ago in this journal.² In that article the opinion was expressed that the axiom of parallels was *a priori* in a sense which it was the object of the article to make clear. The opinion was also expressed that its *a priori* nature was doubted only because its usual statement was not sufficiently clear, and that greater lucidity was still to be achieved. The present short article is an attempt to forward that end. Elsewhere, in a more general study of the principles of mathematical method,³ geometry was mentioned as the best example of conceptual truths "almost universally applicable to the perceptual world". The non-euclidean geometries, however, were regarded as exceptional, and concerning them the statement was made that the conceptual series outruns the perceptual and gives us conclusions which have no valid meaning in the object world. Such a statement is, needless to say, contrary to the general trend of expert opinion, and the present paper is written to set the matter forth more clearly and more fully.

The crux of the whole problem is found in the treatment of the axiom of parallels. If we can show that it should be accepted in the same sense as the axiom of quantity, there can be no further dispute. Metageometry, then, becomes an interesting methodological problem, nothing more. There are, as a matter of fact, three possible theories. The first is that the axiom of parallels is *a priori*, a view held by Cayley. The second is that it is deriva-

¹ I have pleasure in acknowledging indebtedness to Prof. Alfred Cardew Dixon, M.A., F.R.S., of Queen's College, Belfast, for kindly criticisms which have enabled me to make my exposition somewhat clearer than it would otherwise have been. Such assistance from so distinguished a mathematician is exceedingly valuable to one whose interest in mathematics is confined to the philosophical side. This acknowledgment, however, must not be understood to imply that Prof. Dixon is committed to the views here expressed.

² *Evolutionary Empiricism*, MIND, No. 73.

³ See "Methods of Applied Mathematics," *Journal of Philosophy*, 30th September, 1909.

tive, and can be proved from other axioms. The third is that it is purely empirical, like, shall we say, a value of Young's modulus in a mechanical problem.

Of these three theories, present-day mathematical analysis has shown the second to be entirely untenable. If the axiom of parallels could be proved, it would follow that the non-euclidean geometries would be impossible. The other axioms would be found to be inconsistent with the denial of the axiom of parallels.¹ Now it is a fact of common knowledge that non-euclidean geometries are self-consistent. We have therefore to decide whether the principle of parallels is *a priori* or empirical. Both views, at first sight, present difficulties. Those holding the empirical view, of whom Mr. Bertrand Russell is the most prominent exponent, are involved in the difficulty that, according to their theory, euclidean geometry is in no way truer than the systems of Riemann or Lobatschewsky. The criticism has been put forward against the *a priori* view that, according to the principles of Kant, there is a difficulty in understanding how euclidean geometries are possible at all. There is no doubt that Kant, were he alive to day, would need to define his position more exactly. Not myself holding the Kantian view, I leave it to those who follow him to say whether or no such a restatement is possible. It will suffice for my purpose to point out that my own Neo-Spencerian view, which I have put forward in this journal, is not involved in any such difficulty. According to any view of the *a priori*, however, it is necessary to show that the principle of parallels is capable of statement in such a form that it is bound to be accepted. We must find a statement which cannot sanely be doubted. The complicated fifth postulate of Euclid is certainly not axiomatic, and the clearest substitute, up to the present, is Playfair's axiom. Although this axiom was regarded by Cayley as *a priori*, it has not received universal acceptance. In place of it, therefore, I venture to submit the following arrangement, which seems to me to exhibit the *a priori* nature more clearly than any suggestion I have seen:—

STEP 1. Definition of a straight line. *A straight line is one which, throughout its entire length, maintains the same direction.* (This is better than the "lies evenly" definition, and is also better than the common substitute "shortest distance" which is certainly a derivative idea. The essential idea of a line is that of direction.)²

¹ The system of Riemann denies not only the axiom of parallels, but the axioms that two straight lines cannot enclose a space. Fourth dimensional geometry and the system of Lobatschewsky is consistent with all the euclidean axioms and postulates except that of parallels.

² The idea of utilising the idea of direction is not altogether new. The most systematic of previous attempts is that of Captain E. T. Dixon (*Foundations of Geometry*, Cambridge University Press). As, however, it is exceedingly doubtful whether he agrees with the view that the axiom of parallels is *a priori*, it will be well merely to mention that he has written a geometry based on the utilisation of the idea of direction, and to

STEP 2. Axiom. *It is possible to draw two or more straight lines in the same direction.*

Definition: Such straight lines shall be called parallel. (The introduction of the idea of a plane at this stage is an unnecessary complication.)

STEP 3. *Parallel straight lines never meet.* (For if they did they would form an angle and so not be in the same direction. The definition of angle and of rectilinear angle would be the same as in Euclid.)

STEP 4. *Through a given point, only one straight line can be drawn parallel to a given straight line.* (For, if not, they would meet. Step 3.)

The statement of Step 4 is actually, though not verbally, identical with Playfair's axiom, but is reached through two steps of reasoning from a simpler axiom.

To get back to Euclid and to plane geometry, we need to show that two parallel straight lines lie in the same plane. For the purposes of elementary exposition this could be assumed, but, for a more severe logical treatment, it could readily be proved. It seems desirable, therefore, to insert two more steps.

STEP 5. *Two straight lines which meet at an angle continually get farther and farther apart, and the distance between them will eventually exceed any assignable distance.*

It would be superfluous to insert the exact steps in reasoning by which this conclusion would be reached. It will be remembered that the fundamental euclidean propositions dealing with perpendiculars, in fact the whole of the first book up to proposition 26, is independent of the postulate of parallels.

STEP 6. (Definition of a plane as in Euclid.)

A plane can be drawn through any two parallel straight lines.
Proof. Draw a plane through one of the straight lines and through one point in the other. If the direction of the second line does not lie in the plane, it (the line) will continually get farther and farther away from the plane with increasing distance from the point of intersection, because it will get farther from any straight line in the plane that passes through the point of intersection.

Granted this step, it is quite easy to show that all straight lines in a plane, not parallel, will meet.

A few words of explanation are necessary clearly to show the bearing of the previous exposition. It is not the object of the paper to invent a new geometry, but rather to show the character of the leave it to others to decide what relation, if any, there is between his ideas and those here put forward. Quite recently, since this paper was written, Captain Hastings Berkeley made a similar suggestion, and put forward two axioms, which, however, seem to me more complicated than that of Playfair. (See my review of *Mysticism in Modern Mathematics, Journal of Philosophy*, 16th March, 1911.) It is not unlikely that other similar suggestions may have been made.

old. Moreover, I lay no stress whatever on the particular arrangement. As it stands, it is intended to introduce as few changes as possible on the old euclidean order and arrangement. There is an undoubted gap in Euclid's reasoning in that he introduces a complicated postulate, which is not only not *a priori*, but which is very difficult to understand and to explain. Many attempts have been made to surmount the difficulty, of which Playfair's axiom is the best known, and, in my opinion, the clearest. Objections have been made to every one, and many mathematicians still hold the opinion that a non-euclidean space is not only conceivable but actually possible. Holding as I do the opinion that curved space is a contradiction in terms, I have good reasons for putting forward another attempt to solve the difficulty. For Playfair's axiom is substituted the axiom of direction (Step 2). The exposition, as it stands, will suffice for the purposes of philosophy. Whether or no it contains anything likely to be of service to writers of textbooks on geometry, must be left to those who deal with such problems to decide.

The difficulty in which both mathematicians and philosophers have been involved is that, to state the axiom of parallels in a simpler form than that of Playfair, a number of collateral changes are necessary. It is hoped that this paper will indicate a method by which such changes can be made.

It is interesting to note how those who deny the *a priori* nature of the axiom of parallels find themselves, by force of logical necessity, occupying a position which differs very slightly from that expressed in these pages. Prof. Poincaré is an excellent example of this tendency. He asserts clearly that, even if astronomical observations should appear to confirm the validity of other forms of geometry, we should not therefore assert the objective existence of other forms of space.¹ He is clear and definite on the point that, under no circumstances, should we give up euclidean geometry. Yet the difficulty of statement prevents him from asserting the principle to be *a priori*.

In submitting a solution for this particular problem, I am, of course, aware that others are raised. What is the meaning of the

¹ The point is of such interest that it will be well to quote one of the most relevant passages: "If Lobatschewsky's geometry is true, the parallax of a very distant star will be finite. If Riemann's be true, it will be negative. . . . But what we call a straight line in Astronomy is simply the path of a ray of light. If therefore we were to discover negative parallaxes, or to prove that all parallaxes were higher than a certain limit, . . . we could either give up euclidean geometry or modify the laws of optics and suppose that light is not rigorously propagated in a straight line. It is needless to say that every one will look upon this solution as the more advantageous. Euclidean geometry has therefore nothing to fear from fresh experiments" (*Science and Hypothesis*, English edition, p. 73).

It would certainly appear that concepts that have nothing to fear from fresh experiments are, if not *a priori*, at any rate remarkably like it.

various systems of metageometry? That they have methodological value is, of course, obvious. But what is their philosophical meaning? How is it possible that our *a priori* principles can be disjointed, and that systems of geometry can be built up on the denial of one of them? Can the same be done with other axioms? Could we, for example, build up an arithmetic in which twice two would differ from four by an infinitesimal amount? Is it possible thus to find a self-consistent arithmetic analogous to our space of constant curvature? Questions like this must be deferred till the preliminary one is settled, and must be decided by those whose knowledge of mathematics is greater than my own. I venture here merely to submit two positions: (a) that the axiom of parallels is *a priori*; (b) that its *a priori* nature is shown by the arrangement suggested in the present paper.

H. S. SHELTON.

REALISM AND PRAGMATISM.

DR. SCHILLER'S recent criticism of my *Present Philosophical Tendencies*¹ does not, I think, throw much light on the merits of the questions discussed, nor is it probable that there will be any profit in replying to it. It does not meet with precision and nicety any of the specific points which I have raised, even when these points are argued with citations from the reviewer himself. But I confess to a feeling of discontent that will not permit me to pass the review by unnoticed.

I have attempted in my discussion of the pragmatist conception of truth² to show the importance of distinguishing between those values which ideas have as instruments of the theoretic interest, the values namely of perceptual verifiability and of consistency with accepted beliefs, and those values which ideas have through their service of other interests, such as politics, or through their subjective emotional effect upon the agent, as in the case of religious faith. I have suggested that if one groups all of these values loosely under the notion of utility, and defines truth in terms of comparative utility, one virtually defines as true an idea which may be contrary to perception, or inconsistent with accepted beliefs, provided only there is enough of sentimental satisfaction in it to compensate. If *all* the values which ideas may have are to count for truth and be simply summed and subtracted, then in any given case disproof by scientific or logical methods may be overbalanced by positive values of "subsequent utility" or tonic emotionality. On this precise point Dr. Schiller has nothing to say. He simply reiterates the "biological necessity" that all the idea-values shall determine the idea's "survival". This, so far as I know, has never been denied. The question is whether an idea that was contrary to sensible experience might not survive because its emotional value outweighed the dissatisfaction at its contrariety to sensible experience; and whether therefore such an idea might not be "true" on Dr. Schiller's theory.

Dr. Schiller accuses me of having attempted to "read a metaphysical meaning into a number of pragmatic pronouncements which are clearly methodological". But the texts from which I have cited in arguing that pragmatism of the Schiller type is subjectivistic bear such titles as *The Ethical Basis of Metaphysics*,

¹ MIND, No. 86.

² *Present Philosophical Tendencies*, p. 203 ff.

Philosophy and the Scientific Investigation of a Future Life, and *The Making of Reality*. No pragmatist that I have ever read has confined either himself or his pragmatism to "methodological" considerations; and it is perfectly clear that Dr. Schiller himself does not mean to do so, for he proceeds at once to present a third alternative which may save him from the necessity of deciding between idealism and realism.¹

This third possibility which I am accused of "ignoring" is "the correlation of a mind-with-objects and objects-for-a-mind". I have *not* ignored this possibility. I have recognised it as a very common formulation of idealism.² The reader will observe that in the above formula the only constant is mind, or a relationship distinguished by the fact that mind must always be one of its terms. But waiving this point, how is one to discover the *real importance of this "correlation" to whatever may take the place of object in it*? How is one to determine the real, as distinguished from the methodological place of mind in the world? This is a fairly important question and it is the question at issue between idealism and realism. I cannot believe that it is "merely academic" and must therefore crave Dr. Schiller's indulgence further.

Now as to "the Ego-centric Predicament". Dr. Schiller admits that I give "much prominence" to it. But he must have discovered that fact by consulting the Index or the Table of Contents.³ For he has not in the least understood the point, and most of what he attributes to me is flatly contradicted by the text. He suggests that I infer realism from the Ego-centric Predicament, whereas I have invariably asserted that *nothing can be argued from it*. My central point is that it is a *predicament* and throws no light on any question. Hence I should object that Dr. Schiller must not argue from it in support of his own *tertium quid*, whereas he does so in this very context. Again, he says that the predicament "seems to exclude nothing but the right to assert unknowable realities"; and that "unfortunately these are precisely what Prof. Perry wishes to assert". Now this is odd—in view of my italicised assertion that "it would not be far from the truth to say that the cardinal principle of neo-realism is *the independence of the immanent*".⁴ What I do desire to assert, is, of course, that what is

¹ Should Dr. Schiller propose that the term "pragmatism" be confined to whatever is merely "methodological," then it would be simply a question of inventing some new name for the metaphysical sequel. There is such a sequel in the case of every pragmatist with whose writings I am familiar.

² Cf. *Present Philosophical Tendencies*, pp. 133, 155-156, 315-316, etc.

³ If Dr. Schiller has skipped a few chapters here I cannot blame him. The matter is tiresome enough.

⁴ *Present Philosophical Tendencies*, p. 313. But perhaps Dr. Schiller is relying on the authority of Prof. Pratt's "very able critique". It is difficult to suppose that two such downright misstatements of a view

known is independent of that fact, or that the "correlation" is accidental so far as the thing that appears as object is concerned.

And I propose to assert this on the evidence that I can obtain concerning the nature of mind. Without the least assistance from Dr. Schiller, I have explicitly stated that to prove my realism "something more is wanted than a proof of the failure of idealism". I have contended that if we want information concerning the necessity of the correlation in question for the thing related as object, the sooner we fall to examining the nature of the relation and especially of its constant term "mind," the better. Idealist, realist, and Dr. Schiller are here all in the same boat. None can prove his thesis without appealing to the nature of mind. I have therefore set forth the nature of mind to the best of my ability. I wish that Dr. Schiller might be persuaded to follow suit, with a clear statement of what he means by "life-process" (p. 282), "for-a-mind," and "experienced" (p. 283). We might then hope for some light on the important question cited above.

All that is clear concerning Dr. Schiller's view is that "biological necessity" is evidently not an infallible guide here. For biology does not treat the correlation of mind and environment as symmetrical and universal. It treats environment (or natural substances and processes which when related to an organism are called its environment) as prior to and independent of mind. My own observation and reflexion lead me to believe that the assumption of biology is correct. Mind appears to me to be a mode of response to an independently existing environment. I do not beg the independence, as Dr. Schiller suggests. I am not like Dr. Schiller, arguing the matter abstractly and dialectically. I base my conclusion on the observation that when an animal organism reacts sentiently to natural bodies in its vicinity, the relation is not such as to prejudice the independence of the natural body. The latter cannot be said to owe its existence, or its distinguishing properties, to this relation; but can be said to owe them to other relations, such as its relation to its physical causes.¹

Finally Dr. Schiller takes exception to my interpretation of James. He sees no reason "to depart from the view that James's 'realism' is pragmatic and not metaphysical, and that my [Schiller's] 'psychologism' is 'critical' and not subjectivistic". I think I have made it perfectly clear in my book that I am using the term "realism" to mean the independence of things on the whole idea-experience complex into which they may enter as objects. I recognise the pragmatic realism which Schiller attributes that is repeated *ad nauseam* in the text, should have arisen independently.

¹ The question of the nature of mind is an empirical question, to which I have devoted the longest chapter of my book (ch. xii.). What notion of consciousness does Dr. Schiller accept? Or is this, too, an academic question? "Independence" I have defined with some care in *The New Realism*, ch. ii.

to James, the view, namely, that immediate experience is independent of ideation; and characterise it as a "half-realism".¹ James is, of course, a realist in this limited sense. But he was also, in his later philosophy, a realist in the first and fundamental sense, and in this sense Dr. Schiller is not. The key to this realism is in the essay "Does Consciousness Exist?"² Consciousness (thought, perception and feeling alike) is a relation, the terms of which are identical with those of nature and certain non-temporal conceptual "realms,"³ and are interchangeable between mind and matter. The relationships assumed by these terms or "materia prima," are not all "solidaries with one another," so that the relations of an element as term of nature may be independent of its relations as term of consciousness. Now this I hold to be both James and also realism in a "metaphysical" sense.

Dr. Schiller refers me to his review of James's *Meaning of Truth*, in MIND, No. 74. But his point there is simply that James allows his "excellent metaphysic," Radical Empiricism, "to ooze through into his epistemological discussions" (p. 262). My contention is simply that the "excellent metaphysic" in question is realistic, and this Dr. Schiller has not denied. This particular metaphysical question has to do with epistemology, that is with the place of knowledge and consciousness in the world at large, and I can see no objection to an epistemologist's having an answer to it. But that when I called James a realist and Schiller a subjectivist I meant to refer to their metaphysics, I expressly and clearly stated in the text.⁴

As for Dr. Schiller's 'psychologism' it may have had its moments of being merely 'critical'. But when to a psychologicistic epistemology is added the assertions that 'ontology, the theory of Reality,' is 'conditioned by epistemology, the theory of our knowledge'; that 'the knowledge-process is the life-process'; that truth 'has the making of reality'; and that 'our ultimate metaphysic must be ethical,'⁵ it does not seem wholly unreasonable to characterise the author as 'subjectivistic'.

Just two further points. Dr. Schiller objects that I fail "to bring out the intimate connexion between James's psychology and his philosophy" (p. 282); whereas as a matter of fact I interpret his whole philosophy in terms of his theory of mind. Dr. Schiller should have said that my interpretation of James's psychology did not agree with his own; and should have corrected

¹ *Present Philosophical Tendencies*, ch. xiii., § 5.

² *Essays in Radical Empiricism*, ch. i. and *passim*.

³ *Some Problems of Philosophy*, p. 101.

⁴ P. 215. That it is possible to isolate the pragmatist theory of truth from metaphysical theories I have taken pains to state. I have proposed to adopt such a view myself. Cf. *Present Philosophical Tendencies*, pp. 213, 325, 347.

⁵ *Humanism*, pp. 11, note 9, 105; *Studies in Humanism*, p. 451: MIND, No. 86, p. 282.

me when I was at fault. He should not have suggested that I neglected a relationship on which I laid the greatest emphasis. Second, I have made the 'serious mistake' of attributing to James "an existential sense-manifold" *a la Hume-Kant-Russell*". Does Dr. Schiller object to my phrase, or has he overlooked such passages as the following: "Experience is only a collective name for all these *sensible natures*" (space, intensity, flatness, brownness, etc.); "Reality consists of *existential particulars* as well as of essences and universals and class-names, and of *existential particulars* one becomes aware only in the perceptual flux"?¹

I might add that Dr. Schiller's review of my book is entirely *ex parte*. Concerning the main purpose of the book, namely to summarise and criticise current tendencies as a whole, I cannot find that he has anything to say.

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¹*Essays in Radical Empiricism*, p. 27; *Some Problems of Philosophy*, p. 78. (Italics mine.)

THE MEANING OF KANT'S COPERNICAN ANALOGY.

KANT's comparison (*Kritik der reinen Vernunft*, 2nd edition, p. xvi. (original paging) and note to p. xxii.) of his new hypothesis to that of Copernicus has generally been misunderstood. The reader very naturally conceives the Copernican revolution in terms of its main ultimate consequence, the reduction of the earth from its proud position of central pre-eminence. But that does not bear the least analogy to the intended consequences of the Critical philosophy. The direct opposite is indeed true. Kant's hypothesis is inspired by the avowed purpose of neutralising the naturalistic implications of the Copernican astronomy. His aim is nothing less than the firm establishment of what may perhaps be described as a Ptolemaic anthropocentric metaphysic. Such naturalistic philosophy as that of Hume may be described as Copernican, but the Critical philosophy, as humanistic, has genuine kinship with the Greek standpoint.

Even some of Kant's best commentators have interpreted the analogy in the above manner. It is so interpreted by T. H. Green (*Prolegomena to Ethics*, bk. i., chap. i., § 11). Caird in his *Critical Philosophy of Kant* makes not the least mention of the analogy, probably for the reason that while reading it in the same fashion as Green, he recognised the inappropriateness of the comparison as thus taken. The analogy is stated in typically ambiguous fashion by Lange (*History of Materialism*, English trans., ii., pp. 156, 158, 237), and by Höffding (*Geschichte der neueren Philosophie* (1896), ii., p. 64). Prof. S. Alexander, while very forcibly insisting upon the Ptolemaic character of the Kantian philosophy, also indorses this interpretation, in the following terms: "It is very ironical that Kant himself signalled the revolution which he believed himself to be effecting as a Copernican revolution. But there is nothing Copernican in it except that he believed it to be a revolution. If every change is Copernican which reverses the order of the terms with which it deals, which declares A to depend on B when B had before been declared to depend on A, then Kant—who believed that he had reversed the order of dependence of mind and things—was right in saying that he effected a Copernican revolution. But he was not right in any other sense. For his revolution, so far as it was one, was accurately anti-Copernican" (*Hibbert Journal*, October, 1910, p. 49). As Kant's second edition preface is not covered by the published volumes of Vaihinger's commentary, the point has not been taken up by him.

Now Kant's own statements are entirely unambiguous and do not justify any such interpretation as that of Green and Alexander. As it seems to me, they have missed the real point of the analogy. The misunderstanding would never have been possible save for our neglect of the scientific classics. Kant had, apparently, first-hand acquaintance with Copernicus's *De Revolutionibus*, and the comparison which he draws assumes similar knowledge on the part of his readers. Copernicus by his proof of the "hypothesis" (his own term) of the earth's motion sought only to achieve a more harmonious ordering of the Ptolemaic universe. And as thus merely a simplification of the traditional cosmology, his treatise could fittingly be dedicated to the reigning Pope. The sun upon which our terrestrial life depends was still conceived as uniquely distinct from the fixed stars. Giordano Bruno was the first, a generation later, to realise the further and more revolutionary consequences to which the new teaching, consistently developed, must inevitably lead.

Copernicus's argument starts from the Aristotelian principle of relative motion. To quote Copernicus's exact words (*De Revol.*, i., v.): "All apprehended change of place is due to movement either of the observed object or of the observer, or to differences in movements that are occurring simultaneously in both. For if the observed object and the observer are moving in the same direction with equal velocity, no motion can be detected. Now it is from the earth that we visually apprehend the revolution of the heavens. If, then, any movement is ascribed to the earth, that motion will generate the appearance of itself in all things which are external to it, though as occurring in the opposite direction, as if everything were passing across the earth. This will be especially true of the daily revolution. For it seems to seize upon the whole world, and indeed upon everything that is around the earth though not upon the earth itself. . . . As the heavens, which contain and cover everything, are the common locus of all things, it is not at all evident why it should be to the containing rather than to the contained, to the located rather than to the locating, that a motion is to be ascribed." The apparently objective movements of the fixed stars and of the sun are mere appearances, due to the projection of our own motion into the heavens. "The first and highest of all the spheres is that of the fixed stars, self-containing and all-containing, and consequently immobile, in short the locus of the universe, by relation to which the motion and position of all the other heavenly bodies have to be reckoned" (*De Revol.*, i., x.).

Now it is this doctrine, and this doctrine alone, to which Kant is referring in the passages before us, namely Copernicus's hypothesis of a subjective explanation of apparently objective motions. And further, in thus comparing his critical procedure to that of Copernicus, he is concerned more with the positive than with the negative consequences of their common hypothesis. For it is

chiefly from the point of view of the *constructive* parts of the *aesthetic*, *analytic*, and *dialectic*, that the comparison is formulated. By means of the Critical hypothesis, Kant professes on the one hand to account for our scientific knowledge, and on the other to safeguard our legitimate metaphysical aspirations. The spectator projects his own motion into the heavens; human reason legislates for the domain of natural science. The sphere of the fixed stars is proved to be motionless; things in themselves are freed from the limitations of space and time. "Copernicus dared, by an hypothesis, which, though contradicting the senses, was yet true to seek the observed movements, not in the heavenly bodies, but in the spectator" (Kant's note to p. xxii.).

Watson's *Philosophy of Kant Explained* (p. 37) is the only work in which I have found correct and unambiguous indication of the true interpretation of Kant's analogy.

NORMAN KEMP SMITH.

VI.—CRITICAL NOTICES.

Ethics. By G. E. MOORE, Lecturer in Moral Science in the University of Cambridge. The Home University Library, Williams & Norgate. Pp. 256.

ONLY a few months ago Dr. Bosanquet reviewed in these columns Mr. Bertrand Russell's *The Problems of Philosophy*. And now Mr. Russell's philosophical ally has put forth in the very same series a volume of identical dimensions, dealing with fundamental problems in Ethics. Readers of *Principia Ethica* will find in Mr. Moore's latest work the same dialectical ability, the same engaging simplicity of language. Yet, perhaps they will be a little perplexed—and that, too, for more than one reason.

First of all, let us briefly consider the composition or structure of the book, as distinct from its ethical significance. And here we may devote a few words to what is presumably its object. It is, in its conception, I gather, a concise introduction to Ethics; it assumes on the part of the reader no acquaintance with the thinkers of eminence, the writers "of acknowledged reputation" (p. 253); it is in a certain sense "popular"; it is for that wide general public, who come uninstructed to the subject and would attain to some broad comprehension of the fundamental questions at issue. It may, therefore, be appropriate to inquire in what degree it fulfils this main object. As one who has had some experience of teaching, I have ventured before now to point out that the traditional methods of approaching philosophy are far too remote from the minds of the pupils. But, if this applies to the pass-man, it applies also to "the man of the world," who is busy, intelligent, untrained. We should begin, as Aristotle would say, with what is known to us, γνῶμαν ἡμῖν. And so I could wish Mr. Moore had set out with "the conflict of duties," with some popular ideas of right conduct, with the current conflicting moral judgments—in a word, with some common experience, however unreflecting, isolated or crude. From that basis he might have advanced to *Principia Ethica* at the last. He would seem, on the contrary, concerned in the main with that small class of men, who are strictly termed moral philosophers, and their manifest conflicts of view. He appeals at the outset to "experts" (p. 9). Grant that the mental and the physical sciences in like manner are the work of the "experts". But will the audience, to whom (I conceive) Mr. Moore makes his primary appeal, see the intimate bearing of their theories, so

elaborate, comprehensive, ingenious, upon their daily and immediate experience? The two opening chapters of *Ethics* are devoted entirely to a theory, which "seems to him," Mr. Moore says, "what is often meant by the familiar name 'Utilitarianism'" (p. 77). He considers it "peculiarly simple and easy to understand" (p. 12). And "simple" it is—in some senses! It is capable of statement in quite simple language; it may run at times into commonplace judgments; the rudiments of it may be sought in the statement that "men desire pleasure". Yet the uninstructed reader, as I think, will have a great difficulty in detecting the fundamental questions at issue and bearing them clearly in his mind in virtue of so many, so subtle distinctions, so continuous a flow of dialectic. In a note upon books at the end Mr. Moore recommends among others Canon Rashdall's *Theory of Good and Evil*. Canon Rashdall comes nearer "common sense" in his method of approaching the problems, though beginning with Hedonist doctrines. May I venture in this connexion to suggest that MIND would be doing a great service to philosophy, did it open from time to time its columns to discussion of the problems of teaching? If philosophy is ever again to be a real power in the world, our thinkers must both teach and write not only with simplicity of language but also with a greater attention to the psychology, the difficulties, the circumstances and the daily experience of the audience.

I have one more observation to make upon the substance of *Ethics* as a whole, and it is complementary to those I have been urging. While beginning with a philosophical theory, which may or may not have been held in its totality by any one thinker (p. 77), Mr. Moore has admittedly written from the standpoint of one single school—let us call it the new Intuitionism. Hence the ordinary reader may suppose that this school holds the field at the moment—which I conceive not to be the case, how powerful so ever it may be in philosophical circles in Cambridge.

So much, then, on Mr. Moore's volume considered as a prelude to the study of Ethics. In its scope and its character it differs entirely from Prof. Sorley's *The Moral Life*. Neither, again, is it a history of Ethics.

And now something at least must be said of the main positive doctrines of *Ethics*. "For further explanation," observes Mr. Moore, "of the views advocated in the present work the reader may be referred to the author's *Principia Ethica* . . . which presents the same general view in a rather different form, and which also contains discussions on various points entirely omitted here from lack of space" (p. 254). The main omission would appear to be this—Mr. Moore tells us little or nothing of the logical or metaphysical background of his central doctrine of the notion of "good". The very word "notion" occurs, as I think, only once in the volume—and that, too, of "right," not of "good" (p. 146). If he know not already his *Principia*, will the reader understand

from this book that "good" is an objective quality of objects, as objective apparently as "yellow"? This omission appears to my mind in no small measure to detract from that lucidity (as distinct from simplicity of language), which Mr. Moore's philosophical followers will find so conspicuous in *Ethics*.

And now as to this doctrine of "good". To put it briefly, so Mr. Moore tells us, we judge of a number of things, that they are "good" or have "intrinsic value". We do not in making such judgments mean that they are "pleasant" or "desired" or that we have any mental attitude towards them, whether of feeling, desiring or thinking. We mean that it would be "worth while" that those particular things "should exist". "Good" (the word) is admittedly ambiguous, we may use it in more than one sense, on occasions we may possibly use it to mean merely that some one or other has some mental attitude or feeling towards the thing called by him "good" (p. 161). But Mr. Moore would concentrate our attention upon that single use of the term, to which I have just now referred. He argues that "to judge that a thing is intrinsically good is not the same thing as to judge that some man is pleased with it or desires it for its own sake" (p. 165). "This follows absolutely," he argues, "if even in a single case, a man believes that a thing *is* desired and yet does *not* believe that it is intrinsically good." But how does it follow absolutely? Meaning is ever individual, can only be determined by the speaker. But Mr. Moore gives us universal meanings. For as much as in some concrete cases the speaker does not *ex hypothesi* mean "desired" by "intrinsically good," therefore in no case whatever does "intrinsically good" mean "desired"! And I cannot myself follow that.¹ "But I am not sure," continues Mr. Moore, "that this argument will hold against all forms in which the view might be held. . . . It may, so far as I can see, be true that there really is some very special feeling of such a nature that any man who knows that he himself or anybody else really feels it towards any state of things cannot doubt that the state of things in question is intrinsically good. If this be so, then the last argument" [that some men "can and do judge that things which they themselves desire or are pleased with, are nevertheless intrinsically bad"] "will not hold against the view that when we call a thing intrinsically good we may mean merely that *this special feeling* is felt towards it. And against any such view, if it were held, the only obvious argument I can find is that it is surely plain that, even if the special feeling in question had *not* been felt by any one towards the given state of things, yet the state of things *would* have been intrinsically good" (p. 166). This, I conceive, is no other than

¹ Suppose that in Mr. Moore's argument "right" and "conducive to the Good" were substituted for "intrinsically good" and "desired"—what then? Some old-fashioned Intuitionist (if any such still there be) might add to the gaiety of nations by parodying Mr. Moore's book.

the central passage of the book, and I would direct to it especial attention.

1. Let us suppose for a moment that some one of Mr. Moore's readers has borrowed his dialectical weapons. Might he not answer as follows?—"When I judge that the state of things in question is good or has intrinsic value, I mean merely that I feel thus towards it; and, did I not feel thus towards it, it would *not* have been intrinsically good. All that we need to show, is that we sometimes use 'good' in that manner. Hence 'intrinsically good' has two meanings. You refer to an objective quality and I to a subjective feeling. Is your science concerned with both senses? If not, why with one and one only?" Mr. Moore would, I think, be hard put to it to find a way out of the difficulties, that would immediately arise in this context.

2. And now, not to follow Mr. Moore in the paths of a subtle dialectic, I will go on very briefly to point out my main difficulties in regard to his doctrine. Consider this statement once again: "Even if the special feeling in question had *not* been felt by any one towards the given state of things, yet the state of things *would* have been intrinsically good". "*Would* have been intrinsically good"—this brings us to the doctrine of the notion. Objects are assumed to be "good" apart from all feelings or attitudes towards them.¹ "Intrinsic value" belongs to them *somewhere*—is (so we read in *Principia Ethica*) a non-natural property or quality as yellow (for instance) is a natural. But *how* does this quality belong to them? What can be meant by "belong" in this context? I am simply at a loss to discover what is Mr. Moore's answer to these questions. This objective and non-natural property is the strangest noumenon of our time; and like some other more famous noumena it appears to be simply unknowable. "It will perhaps gravel even a philosopher to comprehend it," as Berkeley might say. What a glibness and lightness of heart the philosophers betray, when they predicate qualities! How many, for instance, there are, who predicate "existence" of objects, but are totally unable to tell us what kind of existence they speak of!

3. Mr. Moore is no intuitionist in the commonplace sense of that term. Yet, if old-fashioned crude intuitionists say that "right" belongs somehow to actions as a simple, indefinable quality, what answer could Mr. Moore make? Would there not then be two simple notions, unrelated the one to the other? And what, then, becomes of our science? Yet he does but transfer the old eructes from the judgments that predicate "right," to the judgments that predicate "good". If we take up on behalf of the critics Mr. Moore's

¹ However, "it does seem as if nothing can be an intrinsic good unless it contains *both* some feeling and *also* some consciousness; and, as we have said before, it seems possible that amongst the feelings contained must always be some amount of pleasure" (p. 249). Intrinsic goods contain feeling, but we need have no feelings *towards* them.

special logical standpoint, some judgments are "true" and some "false"; yet judgments of intrinsic value are admittedly "incapable of proof". How, then, shall we come to a conclusion in the vast prodigality of judgments? First of all, we judge rightly or wrongly that certain objects have "intrinsic value"—we seem to ourselves to perceive that they possess this unique simple quality; and, secondly, we seem to perceive or we judge that our judgments are "true". We do but repeat the old chaos, the climax of old intuitionism.

4. What is meant by this "intrinsic value"? That 'tis "worth while" a thing "should exist"? *Obscurum per obscurius*, surely. What kind of existence is intended? And, secondly, how can we say it is worth while that a thing should exist without reference to some purpose or end? As I have ventured to put it elsewhere in an argument against Mr. Moore, "'Value' and 'worth,' being idols of the market, in this context are *Idola Fori*".¹

These, then, are the pre-eminent difficulties, that I find in this doctrine of "good," viewed simply and solely in itself. Mr. Moore, as I have hinted already, would have made it far clearer to the reader, had he simply asserted at the outset that there is such an objective quality, characteristic or property of things, that we use the word "good" to denote it (by "good" meaning "intrinsic value"), that ethics (as handled in his volume) has this property for its primary object.

The final feeling that I have of the book is summed up in that phrase of St. Ambrose: *Non in dialectica complacuit Deo salvum facere populum suum.*

HAROLD P. COOKE.

Die Realisierung: Ein Beitrag zur Grundlegung der Realwissenschaften. Von OSWALD KÜLPE, Professor an der Universität Bonn. Erster Band. Leipzig: Verlag von S. Hirzel, 1912. Pp. x, 257.

In a paper that Prof. Külpe read at the last meeting of the International Congress of Philosophy, held at Bologna in 1911, he dealt briefly with some of the problems connected with the concept of Reality. These problems, we now learn, have occupied his thought for the past fourteen years, during eight of which he discussed them in his lectures at Würzburg. And the volume now under review constitutes the first substantial instalment of a work planned in four volumes in which Prof. Külpe proposes to present and explain fully the results of his prolonged reflexions on the numerous problems associated with the assertion and determination of Reality in all its forms. The satisfactory solution of these

¹ *Cambridge Magazine*, 30th Nov., 1912.

problems lies at the very basis of those sciences that purport to deal with real objects (*die Realwissenschaften*), as distinguished from those that (like mathematics, for instance) are mainly concerned with ideal objects, or those (if any) that purport to be occupied with what is purely phenomenal. And Prof. Külpe's aim is to vindicate the realism of the *Realwissenschaften* by means of an adequate Theory of Knowledge.

By *Realisierung*, or 'realisation,' Prof. Külpe does not mean what those terms usually denote, namely, the process of *making* something real; he means rather the process of *apprehending* in or through consciousness something that is or has been. The object so apprehended is called 'real,' and the process is one of 'realisation.' This process, moreover, is twofold, or has two aspects. First, there is the process of apprehending or asserting *that* something is, and in the second place there is the process of apprehending and asserting *what* it is. (Kant's postulation of an unknowable thing-in-itself is a typical instance of the former process by itself.) The problem of 'Realisation' may therefore be resolved into the following four distinct problems or questions, which may accordingly be regarded as formulating the general scheme of Prof. Külpe's whole inquiry: (1) First, is it legitimate to *assert* reality at all? (2) Secondly, if so, *how* is it possible to assert reality? In other words, on what grounds (empirical or rational) can such assertion be based? (3) Thirdly, is it possible to *determine* the character of the real? (4) Fourthly, if so, *how*, or on what grounds, is it possible to determine the character of the real?

Prof. Külpe rightly remarks that the natural sciences have hitherto always proceeded on the assumption of realism (that is to say, on the assumption that they were treating of real things transcending the subjective impressions or experiences of the investigator), and, considering their enormous achievements while working on this assumption, it will take a great deal to overthrow their realism. It will certainly require much more than the kind of abstract generalities with which Mach and others try to justify their anti-realist theories. Prof. Külpe's plan is to discuss in turn all the anti-realist arguments that have ever been propounded by responsible thinkers, and, after showing their inconclusiveness against the realist standpoint, to proceed positively and constructively to an exposition of his own philosophy of critical realism. As regards the present volume, the early portions are devoted to preliminary explanations, while the bulk of the book is taken up with an exhaustive discussion of the first of the four questions formulated above.

Is it legitimate to assert reality of any objects of human experience? Is it permissible to recognise a special class of 'real' things? These paraphrases of Prof. Külpe's first question may be necessary because its purport may be easily misconstrued. By something 'real' he means something transcending the subjective experience

in which or through which it is apprehended or asserted. This subjective experience as such has *Wirklichkeit*, or 'actuality' (in the literal sense), but not 'reality,' except perhaps in so far as it may be made the objective reference of *another* assertion, in which case the 'reality' of the former assertion would 'transcend' the latter assertion regarded merely as a subjective process. Moreover, the bare 'transcendence' of subjective experience does not yet constitute 'reality,' for 'ideal objects' mere constructions of human thought (like mathematical concepts, for example) have such 'transcendence' or objectivity without having reality. Unless all this is borne in mind Prof. Külpe's question may easily appear very unreal. For, it may be urged, who has ever doubted that there are realities? Even sceptics, as St. Augustine and Descartes have made abundantly clear, could never have doubted the reality of their own sceptical states of consciousness. But granting, as of course Prof. Külpe grants, the actuality of all conscious processes as such, there still remains the further question whether or no such actual states of consciousness are also a means of apprehending realities that transcend them. And it is to such 'transcendent' reality that the above question refers. Unsophisticated common-sense and natural science implicitly answer this question in the affirmative. But numerous philosophers, and even certain scientists with a philosophical turn of mind, have given a negative answer—though none ever supposed the world to be a blank nothing, if one may say so. Prof. Külpe's first question might perhaps with advantage have been formulated somewhat differently, but his meaning is sufficiently clear, and his question, properly understood, is perfectly relevant.

Prima facie it might be supposed that its fruitful use in everyday life and in science constitutes sufficient evidence of the validity of the distinction between real objects, on the one hand, and ideal objects and mere subjective experiences, on the other. Since, however, objections have been raised against it, one's natural confidence in its validity can only be deliberately retained by rejecting the arguments against it. On the other hand, apart from the confutation of such opposing arguments, no additional positive evidence is really necessary in justification of the validity of the distinction in general, as distinguished from its application to particular cases. Prof. Külpe, accordingly, considers that he will have sufficiently established his view of the general validity of the process of 'realisation' if he should succeed in refuting all the anti-realist arguments that have ever been put forward.

Now those who decline to recognise 'real' objects as a special class of entities must resort to one or other of the only two rival theories, namely, *Konszientialismus* and Objective Idealism. The first of these rival views regards all things as states of consciousness, whether of an individual consciousness (subjective idealism, or Solipsism), or of consciousness in general (the theory of immanence).

Objective Idealism, on the other hand, distinguishes the process of consciousness from its objects, but treats all objects as ideal constructions. Both theories, however, are opposed to the recognition of a class of real objects that need be neither mere states of consciousness nor yet mere thought-constructions. Prof. Külpe arranges all the anti-realist arguments under one or other of these two principal headings, and ingeniously pits some of the arguments of one of the two anti-realist theories against those of the other, so as to facilitate the mutual annihilation of both foes of Realism. Needless to say Prof. Külpe's treatment of the subject is characterised by great erudition and critical acumen. I must content myself, however, with the briefest indication of the main drift of the book.

Konszientialismus, Prof. Külpe thinks, has rendered a service in drawing attention to the fact that conscious experience is the starting-point of all scientific knowledge, but has fallen into the exaggeration of supposing consciousness to be everything. It has overlooked the fact that in experience itself there is implicit a reference to objects transcending it. Moreover, if we were strictly confined to mere processes of consciousness no science would be possible, not even the science of Psychology, the great stronghold of this theory. For even Psychology has to resort to 'transcendent' objects, in the form of unconscious factors, etc., in order to explain the real continuity and connectedness of mental life in spite of the apparent interruption and disconnectedness of conscious processes. And if even Psychology cannot do without 'transcendent' realities, how much less can the natural sciences dispense with them! Similarly, Objective Idealism has the merit of having emphasised the importance of thought for knowledge, but has erred into an exaggeration of the place and function of thought in the general scheme of things. No knowledge, no science would be possible without thought. But though some sciences, such as mathematics, for example, deal mainly with the creations of pure thought, still none is entirely the creation of thought, all sciences depending more or less on experience and observation for their starting-point. This is eminently the case with the empirical sciences. The fact that objective idealism commonly seeks support in ethical or religious postulates is regarded by Prof. Külpe as a betrayal of its indifference in its properly scientific foundations. Critical Realism, he maintains, combines the partial truths of both its rival theories, while avoiding the errors of either. It emphasises the importance of experience as the starting-point of all knowledge without falling into the error of making it also the end of all knowledge; and it stresses the factor of intellectual construction in the work of discovery, without identifying the realities discovered and construed by thought with thought itself or thought-constructions. It is, moreover, the only view that does not invalidate the work of the sciences.

It will be observed that Prof. Külpe's criticisms assume the validity of the sciences. This may look like a *petitio principii*.

For it might be urged that the validity of the sciences depends on on the validity of the processes of 'realisation'; hence to base the validity of 'realisation' on the assumed validity of the sciences is to beg the question. Prof. Külpe's procedure, however, appears to be quite valid. The anti-realist arguments which he is concerned to refute are all, or nearly all, based on the ground that 'realisation' involves assumptions which are inconsistent with the methods and ideals of science. Now Prof. Külpe rightly maintains that the methods and ideals of science are best studied by observing the actual methods and aims pursued in actual scientific investigation; and any theory that would render the sciences themselves invalid has no claim to be called scientific, or to speak with the authority of science.

A realist reviewer is not likely to find much cause for complaint in Prof. Külpe's searching criticisms of anti-realist standpoints. At the same time it should be noted that he has not yet explained the precise character of his realist philosophy. 'Realism' may cover a multitude of things, as is evident from the fact that Prof. Külpe brings together under that designation the views of Bradley, Ladd, and the signatories to the American "Program and First Platform of Six Realists". Even the term 'Critical Realism' is not much more elucidating, since it only excludes naïve realism. However, the volume before us contains some indications that Prof. Külpe's Critical Realism will probably not be on the lines of the 'New Realism' expounded by English writers in recent years. Indeed, Prof. Külpe does not appear to be acquainted with the English movement; though it is possible that he is reserving his views of English Realism for later on when he comes to consider the last two questions on his programme. In any case, we are looking forward with great interest to the appearance of the remaining volumes of *Die Realisierung*, the first instalment of which is certainly full of good things.

A. WOLF.

Pragmatism. By D. L. MURRAY. With a preface by Dr. F. C. S. SCHILLER. London: Constable & Co., 1912. Pp. x, 77 (in the series of "Philosophies Ancient and Modern"). Price 1s. net.

THE key-note of this lucid, enlightening and admirably written little book is that it undertakes to show, as Dr. Schiller rightly remarks in his preface, the *intellectual necessity* of Pragmatism—*i.e.*, the theoretical and practical impossibility of maintaining a divorce between theory and practice. "Mr. Murray," says Dr. Schiller, "is quite right in emphasising, above all, the services of Pragmatism, as a rigorously critical theory of knowledge, and in refuting the amiable delusion of many pedants that Pragmatism

is merely an emotional revolt against the rigors of Logic. It is essentially a reform of Logic, which protests against a Logic that has become so formal as to abstract from meaning altogether." Certainly no better guide than this could be placed in the hands of any one who desires a preliminary orientation in the subject. Even the merest philosophic tyro can derive from it a clear insight into the vastness and importance of the new issues that Pragmatism has raised. And it may be recommended with particular heartiness to those critics of Pragmatism who apparently find it difficult to realise that any philosopher should have the hardihood seriously to challenge intellectualist applications of such petrified and sanctified antitheses as those between logic and psychology, 'objective' and 'subjective,' thought and action.

Pragmatism, or Humanism, as Mr. Murray shows in his first chapter, is a stream of many sources, whereof the most important is without doubt the "new psychology" of William James (chaps. ii. iii.). Here Mr. Murray takes as his effective starting-point James's destructive criticism of that Humian atomism which the Kantian 'answer' to Hume so blindly accepted. (Perhaps not sufficient prominence is given to James's keen realisation of thought as a *moving continuum*: a conception which Bergson has since turned to such fruitful account.) "Psychology . . . had worked itself to a break-down by accepting the 'sensationalistic' analysis offered by Hume, and dragged philosophy with it. Yet the escape was as easy as the egg of Columbus to the insight of a genius. William James had merely to invert the problem. Instead of assuming with Hume that . . . all connexions were illusory and all experience must ultimately consist of psychical atoms, James had merely to maintain that this separation was secondary and artificial, and that experience was initially a continuum" (p. 17). "All Hume's problems, therefore, are unreal, and those of his apriorist critics are doubly removed from reality. The whole conception of philosophy as aiming at uniting disjointed data in a higher synthesis runs counter to the real movement, which aims at the analysis of a given whole" (p. 19). From this it now seems an easy step to the principles of Selection (pp. 20-21) and Postulation (pp. 21-33), wherein the indiscerpible unity of theory and practice is brought vividly before our eyes.

By a process comparable to that of ontogenetic recapitulation in the realm of biology, Pragmatism manifestly reproduces in its own genesis the features which it recognises as characteristic of thought in general. For its vital and unifying principle is the determination to "bring Philosophy into relation to real Life and Action" (p. 70). Its superiority "lies in this, that it does not discourage human enterprise by assuming that the real is completely rigid and eternally achieved without regard to human effort. In the drama that unrolls reality, every man, it teaches, has a duty and a power to play his humble but essential part" (p. 76). Consistently with

his final summary of the grounds on which pragmatism challenges comparison with the achievements of Intellectualism, Mr. Murray shows us Pragmatism developing into an articulate system, not as a necessity of 'pure thought' prior to and independent of experience, but as a working policy, responsive to experience of the deceits of dogmatism and absolutism. Pragmatism, in fact, regarded as a philosophic product, is an effort to deal with the situation created by the "bankruptcy of Intellectualism," (chap. vii.). The pragmatist is the man who refuses to throw up his hands and cry *Tout est perdu*, when Intellectualism finally reveals itself in its true character and levels the pistol of universal Scepticism at his head. Instead, he begins by recognising that the obvious impossibility of adjusting our thought to the exacting and peculiar standard of the Absolute—an impossibility aggravated, though it cannot be enhanced, by the fact, so far as under these circumstances anything can be a fact, that in the Absolute thought itself no longer exists "as such"—in no wise relieves us from the *practical necessity* of thinking as truly as we can about what more immediately concerns us. That is the origin of the pragmatist re-examination of the notion of 'truth'. For the professional philosopher is, after all, the only man who can earn, or rather make, a living by proving 'knowledge' to be impossible. And even for him this means of livelihood is seriously threatened by the advent of the pragmatist, poisoning the public ear with his low gibes at 'useless knowledge'. But men in the mass must act and *must work*; and if Ideal Truth is unwilling to share this humble lot with them, they must e'en cast about for some less dignified helpmeet.

Pragmatists, therefore, proceed to investigate the nature and standards of *that kind of thinking* to which value is attached alike in the markets, the battle-field and the laboratory. They thereby find themselves in occupation of what is philosophically a virgin territory, the resources of which they have as yet only begun to exploit. It is the land where dwell all such hitherto unconsidered trifles as time, personality, value, purpose, action—which Intellectualism has had to rule out in its self-defeating effort to grasp the Whole.

"No doubt it seemed to simplify the problem to suppose that the functioning of the intellect could be studied as a thing apart, and unrelated to the general context of the vital functions. Again it was to simplify to assume that thought could be considered apart from the personality of the human thinker. But it should not have been forgotten that it is possible to pay too dearly for simplifications and abstractions, and that they all involve a risk, which the event may show should never have been taken. So it is in this case. Its rash assumptions confront Intellectualism with a host of problems it cannot attack" (p. 67). Thus Pragmatism, which begins by entrenching itself in the territory of Practice, beyond the range of a consistent Intellectualism, if indeed there

were such a thing, ends by dominating the realm of theory and destroying the very idea of its independence and purity.

Mr. Murray has a shrewd reply to the alleged 'subjectivity' of the pragmatic method, which is not, I think, to be found in any other pragmatist: "It should be clear, though it is often misunderstood, that there is nothing arbitrary or 'subjective' in this method of testing beliefs. It does not mean that we are free to assert the truth of every idea which seems to us pretty or pleasant. The very term 'useful' was chosen by pragmatists as a protest against the common philosophic licence of alleging 'truths' which could never be applied or tested, and were supposed to be none the worse for being 'useless'. It is clear both that such truths must be a monopoly of Intellectualism, and also that they do allow every man to believe whatever he wishes, provided only that he boldly claims 'self-evidence' for his idiosyncrasy. In this purely subjective sense, into which Intellectualism is driven, it is, however, clear that there can be no useless ideas. For any idea any one decided to adopt, because it pleased or amused him, would be *ipso facto* true. Pragmatism, therefore, by refuting 'useless' knowledge, shows that it does not admit such merely subjective 'uses'. It insists that ideas must be more objectively useful—*viz.*, by showing ability to cope with the situation they were devised to meet. If they fail to harmonise with the situation they are untrue, however attractive they may be. For ideas do not function in a void; they have to work in a world of fact, and to adapt themselves to all facts, though they may succeed in transforming them in the end" (pp. 50-51).

In conclusion, we may draw particular attention to the very clear presentation, in chapter vi., of the criticisms urged by Mr. Alfred Sidgwick and Dr. Schiller against the fundamental conceptions of Formal Logic.

HOWARD V. KNOX.

William James and Other Essays on the Philosophy of Life. By JOSIAH ROYCE, LL.D., Litt.D. New York: The Macmillan Company, 1911. Pp. xi, 301. Price 6s. 6d.

William James. Par EMILE BOUTROUX, membre de l'institut. Paris: Librairie Armand Colin, 1911. Pp. 143. Price 3 fr.

William James. By EMILE BOUTROUX. Translated by Archibald and Barbara Henderson. London: Longman, Green, & Co., 1912. Pp. vii, 126. Price 3s. 6d.

AMONG the many books and articles commemorating the life and work of William James, which appeared soon after his death in August, 1910, the essay which opens Prof. Royce's book strikes a distinctive note by its unusual standpoint. Whereas most other writers have spoken of James as a Psychologist and a Pragmatist,

and have dwelt *e.g.* on his protests against 'Associationism' in the study of mental processes, and against 'Intellectualism' in the theory of knowledge, Prof Royce dwells rather on the religious and ethical side of James's teaching. He ranks James as the third great typically American philosopher alongside of Jonathan Edwards and Ralph Waldo Emerson. Like these, James stands for and voices the ideas and ideals characteristic of a distinct phase of American national life. From this point of view the emphasis falls not so much on the *Principles of Psychology* or on *Pragmatism*, but on the *Varieties of Religious Experience*, on the *Will to Believe*, on the *Pluralistic Universe*. To us, in Europe, this is a less familiar side of James, notwithstanding what we all owe to the three books just mentioned. But it was, no doubt, a side very much more obvious to all who as pupils, colleagues, friends lived in daily contact with James and came directly under the influence of his rich and varied personality. It is interesting to learn that *Varieties* not merely ushered in a new era in religious psychology by teaching the psychologists 'a new tolerance in their study of religion' (p. 21) and a more just appreciation of the genuineness of the individual's religious experience, but that it has actually quickened and invigorated religious life itself. 'The new gospel, the glad tidings of the subconscious, began to be preached in many lands' (pp. 21-22). Prof. Royce makes it clear that he is unable to agree with a great deal in James's view of religion, but he puts it on record that *Varieties* 'is full of the spirit, that in our country, has long been effective in the formation of new religious sects' (pp. 23-24). And his final verdict is 'I am sure that only an American thinker could have written this survey, with all its unconventional ardor of appreciation, with all its democratic catholicity of sympathy, with all its freedom both from ecclesiastical formality and from barren free-thinking' (pp. 25-26).

In the sphere of Ethics Prof. Royce claims that the two ideals of 'efficiency' and of 'playing the game' represent the modern American's dominant attitude towards life. In the pursuit of these ideals there is much unrest, impatience, wilful caprice, but none the less 'they characterise a people that is indeed earnestly determined to find itself, but that so far has not found itself' (p. 30). These ideals James deepened, purified and even, in a measure, 'transcended'. If he did propose to measure the truth of ideas by their 'consequences,' and to test them by their 'working' in 'experience,' yet he not only took experience in the deepest and most comprehensive sense, but he insisted in the *Will to Believe* above all on the necessity of high ideals and the faith which 'plays the game' by living up to them strenuously and imposing them upon the world. Though he spoke, in his picturesque language, of the 'cash-value' of ideas, the temper of his mind was essentially unworldly and spiritual. He was a kind of 'American Carlyle' (p. 39), 'a prophet of the nation that is to be' (p. 45). In

drawing attention to this side of James's character and teaching—a side that is apt to be forgotten in the heat of controversy about Pragmatism—Prof. Royce has done a signal service to his memory.

The other essays in this volume require no detailed review here, for they mostly deal with topics like loyalty, the vital elements in Christianity, and immortality, on which Prof. Royce has written fully in his bigger works. One essay on 'the problem of truth in the light of recent discussion' was read at the International Congress of philosophy at Heidelberg in 1908.

M. Boutroux's book is delightful reading. It is written with all the charm and elegance of style of which M. Boutroux is a master, and the most convinced disciple of James could not have set forth his theories more appreciatively or persuasively. There is no hint of criticism in these pages. There is only a faithful and vivid presentation of James's whole philosophy, leaving the reader to judge for himself its total achievement and value. After an introductory chapter on James's life and personality, the ground of his philosophy is traversed in chapters dealing with Psychology, Psychology of Religion, Pragmatism, Metaphysical Views, and Pædagogy. The characteristically American trait in James's thought is, according to M. Boutroux, the refusal to be an 'esclave du donné,' the determination to master and mould the world by action. No doubt, this was one of the motives for the pragmatic theory of truth, for 'real possibilities,' and for the protest against a 'block-universe'. Like Prof. Royce, M. Boutroux lays the greatest stress on the religious and ethical teaching of James, and it is an interesting suggestion that James's use of the phenomena of Psychical Research as a clue to the 'psychical basis' of religion may be traced back to the abiding impression of Swedenborg's theories which he received in his youth from his father. Following up this suggestion, one is tempted to say that the two poles of James's 'Radical Empiricism' were Pragmatism on the one side and a certain Mysticism on the other. The former of these had its roots partly in James's training in scientific method with its 'verification' of hypotheses by their 'working,' partly in his moral enthusiasm for re-moulding the world nearer to the heart's desire (the Will to Believe). His Mysticism had its root in his religion and in his interest in all human experiences of the supernatural. This, it seems to me, also explains, what James himself always admitted, *viz.*, that many of his metaphysical theories are no necessary result of his Pragmatic method. This amounts, in effect, to a confession that these theories are not held wholly or solely because they are verified by their 'consequences'. In fact, there is not much attempt to exhibit the verifying consequences of several of the theories which James, as metaphysician, adopted *e.g.* in the *Pluralistic Universe*. His Pluralism, his conceptions of a universe still in the making, and of a finite God, may be held to show us James the Pragmatist, at least on that side of Pragmatism which

would vindicate a place for the effectiveness of human action in the 'making of reality'. But we have James the Mystic in some of the 'over-beliefs' of the last chapter of *Varieties*, in the welcome he extended to Fechner's conception of a World-Soul, and in the view which M. Boutroux summarises as 'la philosophie est plutôt affaire de vision passionnée que de logique'. Not that Pragmatism and Mysticism are necessarily exclusive, even though the dominant attitude of the former is action, and of the latter contemplation, but they are at least sufficiently different to make their synthesis in one world-view a matter of personal temperament rather than of inherent logic. The visionary, though no doubt he will live by his visions and be inspired by them in conduct, yet will hardly wait for their consequences to establish their truth. For James, the connexion was probably mediated by the extraordinary range of his sympathy with every form of experience, by the 'live' interest which he took in every effort of the human mind to feel its way to a deeper truth. But it suggests curious reflexions about the meeting of extremes in philosophy when we find M. Boutroux summarising James's metaphysics thus: 'L'idée essentielle de la métaphysique de James est l'identification de la réalité avec l'expérience la plus large, la plus complète, la plus profonde et la plus directe, à savoir avec la vie la plus intime de la conscience' (p. 135). That view of reality might be supported by the least repentant of Absolutists and Idealists!

The translation of M. Boutroux's book is only of average merit. In style, its worst fault is that it always reads like a translation, the phrasing and the construction of the sentences being full of echoes of the French. Nor is it free from occasional blunders. The worst instance I have come across is to be found on pp. 20-21 where 'A vrai dire, nous ne savons pas précisément si le plus humble réflexe . . . n'est pas, au fond, irréductible au pur mécanisme' is translated: 'Truth to tell, we do not actually know whether the slightest reflex . . . is not actually, at bottom, *reducible* to pure mechanism' (italics mine), which is exactly the opposite of M. Boutroux's argument. And this misunderstanding of the argument is continued into the translation of the next sentence: 'Et, quand l'explication qui suffit au physiologiste coïnciderait exactement avec la réalité, pourquoi tous les réflexes, sans exception, se ramènerent-ils à ces réflexes élémentaires?' which is rendered: 'And when the explanation which satisfies the physiologist *coincides* exactly with reality, why should *not* all the reflexes, without exception, be referred back to these elementary reflexes?' This sacrifices the force of the subjunctive 'coïnciderait' and introduces a 'not' which spoils the sense, the argument of the whole passage being that there is no justification for assimilating all reflexes to the elementary type even if there be cases—which we do not know for certain—for which the purely mechanistic explanation of the physiologist suffices.

R. F. ALFRED HOERNLÉ.

Les Étapes de la Philosophie mathématique. By LÉON BRUNSCHVICG. Paris: Librairie, Félix Alcan, 1912. Pp. xi, 591. 10 francs.

In his preface, M. Brunschvieg remarks that, twenty-five years ago, it seemed that, in order to give a philosophical account of modern mathematics, all we had to do was to appeal to the clear and distinct notion of whole number. However, at the beginning of the twentieth century, "a revolution was announced by the entry upon the scene of symbolic logic. The Aristotelian conception of a class (or of a propositional function) became the keystone of a building whose vast proportions contrasted with the cramped building of arithmeticism, and which seemed to derive its solidity from the elements of discourse in general. But, under the pressure of the contradiction which there was in realising the universe of discourse, the class of all classes, the building collapsed. Mathematical logic (*logistique*), which subsisted without any doubt as a technical discipline, confessed itself powerless to justify mathematics as mistress of the truth. Then, by an inevitable reaction, mathematical philosophy was left to intuition. . . . In this state of things, there only seems to me to be one thing left to do: instead of plunging into the whirlpool formed by so many contrary currents, to consider this whirlpool in itself, and to investigate the conditions of its formation and development. The basis of philosophical criticism would then be in the history of mathematical thought" (pp. v-vi).

Two things are to be noticed about this extract. In the first place, the summary of the recent history of mathematical logic is very inaccurate: this will occupy us later. In the second place, it is not clear why M. Brunschvieg should think that a study of what people have thought should give us any information about the truth of these thoughts. It is doubtfully possible that we may be able to make plausible guesses about the future direction of thought from a knowledge of the current in the past, just as the rough and ready knowledge of hydrodynamics possessed by the average person enables him to make guesses about the as yet unseen currents of a whirlpool. We may remark, by the way, that the analogy of the movement of thought with the movement of molecules is often very misleading. Still, the decision as to whether or no we have knowledge of the truth about certain propositions—and surely this is M. Brunschvieg's object—is ultimately a matter depending on each of us. We may be helped by knowing and thinking through what others have thought, but this is a psychological question. History may help us—and, I think, *does* help us—on the way to the truth in mathematics or philosophy by suggestion or opportunity for criticism: it is not the truth we seek in that place, nor can it possibly be a basis for criticism in any but a psychological sense. Logically speaking, history is irrelevant; psychologically speaking, as a stimulus to new discovery and criticism, history is as indis-

pensable as acquaintance with other people. To say that the only thing to be done in a certain logical difficulty is to consider history is like saying that the only thing to be done when we have failed in solving a difficult mathematical problem is to take a cup of tea. Plausible reasons both for and against the good influence of history and the tea on our work can be given, and neither history nor tea is, logically speaking, at all relevant to mathematics.

M. Brunschvieg's former works on Spinoza and Pascal led him to concern himself with the aspect of history as the basis of philosophical criticism: the positions which these two thinkers took with respect to Cartesian geometry seemed to him to dominate in part their conceptions of human reason and of its exegesis. The domain of these studies is to be extended in this volume (p. vi). "Whenever," says M. Brunschvieg (pp. viii-ix), "one of the great disciplines of mathematics—arithmetic, geometry, infinitesimal analysis—has become conscious of itself, a system in which a universal conception of things was based on this discipline grew up. This was the case with Pythagoreanism, Spinozism, and Leibnizianism. For causes which the passing of time allows us to see at the present day, not one of them succeeded in fixing the mobile equilibrium of thought. *A fortiori*, the attempts of arithmeticism or mathematical logic to bind mathematics to a form which should express a permanent necessity, an eternal truth, were doomed to destruction. History gives an account of the path of thought that brought philosophers to the ontology of Pythagoras or of Aristotle; but it also explains, by making us see the evolution of doctrines which had their starting-point in the arithmeticistic or logistic interpretation of mathematics, why these doctrines were incapable of answering to the dogmatic intention of their founders." M. Brunschvieg thus proposes to explain the controversies in modern mathematical philosophy by the historical method. We must not, then, expect a solution of, or proof of the insolubility of, certain difficulties, but just a use of the researches of learned people to describe the surroundings in which these difficulties grew up, and a tracing of the analogy of the new with the old. I cannot think that the great erudition which M. Brunschvieg has used has been great enough for either purpose, and I will try to justify this statement. Still, there are many true and suggestive things in this volume. Thus, it seems indubitably true that advances in the philosophy of mathematics have always been preceded by technical advances in mathematics, so that it is quite consistent with M. Brunschvieg's plan to study first the stages (*étapes*) of the history of mathematics.

The history of mathematical philosophy begins with the doctrines of Pythagoras and his school, and M. Brunschvieg has to determine the technical progress to which the philosophy corresponds (p. 3). The historical method requires us to begin with the dawn of scientific thought. Now on this subject history is

almost silent, and we only find sufficiently precise indications in some Egyptian documents of great antiquity, of which the Rhind papyrus is the most important. "The only thing that we can do is to turn the difficulty, and substitute for investigations on the primitive era of our civilisations, observations which have been made directly on savage people in our times" (p. 4). Thus the first chapter of the first book is on ethnography and the first numerical operation; and M. Brunschvieg finds the characteristics of mathematical thought—of the way mathematicians think, not, in the usual and wrong sense, of the subject matter of mathematics—in germ here (pp. 21, 22, 23). Then M. Brunschvieg proceeds to discuss a problem of Ahmes from the Rhind papyrus. It seems extraordinary that, when dealing with this papyrus, M. Brunschvieg should entirely neglect that point about it which seems of the greatest interest: I mean the beginnings of algebra in what is known as the "heap" calculus. This is the first instance known of the use of the variable in mathematics, which we now know to be of such fundamental importance. It is recognised, both by more intelligent philosophers and mathematicians, that the notion of the variable and of propositional functions dealing with *any one* of a set of objects are of fundamental importance in mathematics. At a later stage of development the fact that mathematics uses knowledge other than that of a finite number of particulars—that it uses *a priori* and universal knowledge—played a most important part in philosophy and makes up the main point of difference between the *Nouveaux Essais* of Leibniz and the *Essay* of Locke. This is likewise not referred to by M. Brunschvieg.

After a chapter on Pythagorean arithmeticism, M. Brunschvieg proceeds to his second book, on the mathematism of Plato and his school. Like Pythagoreanism, Platonism is a philosophy of a mathematical type: Pythagoreanism—the identification of number with magnitude—had been compromised, as Zeno pointed out by his puzzles (pp. 48, 153-156, 348), by the Pythagorean discovery of irrationals (pp. 45-46), and in Plato's doctrine of geometrical mathematism irrationals played a large part (p. 48). The next two chapters of this second book are devoted to the origins of formal logic and Euclidean geometry. The notion of *class* was suggested to Aristotle by the first attempts at biological classification and by the decomposition of grammatical forms into their elements, and led to the constitution of logical ontology (pp. 341, 390). With the two last chapters of the second book we come to much more modern times and are given an account of the origin of analytical geometry with Fermat and Descartes. With Descartes there were philosophical ideas, whereas with Fermat we merely have to do with technical ideas. The account of the sources of Fermat's *Isagoge* seems very good, and also the distinction that M. Brunschvieg draws between Descartes' conceptions in the *Regulæ* of 1628 and the *Géométrie* of 1637 appears both new and important.

The *Regulae* stand nearer to the work of Descartes in general philosophy, that is to say, the extension of the mathematical method to all cosmological problems—a reform of physics by mathematics which borrows nothing from the technique of the new geometry, while the *Géométrie* contains a reform of mathematics itself, consisting in the reduction of problems of geometry to the problems of algebra. "Space plays very different parts in the physics and in the geometry of Descartes. In the physics, the reduction of quality to quantity consists in retaining only the measurable aspects of sensible phenomena by the help of the dimensions of space. In the geometry, on the other hand, the spatial figures appear as a kind of qualities which are reduced to the purely abstract and intellectual forms of quantity—the degrees of the equation" (p. 107). In the *Regulae*, there appears a characteristic of Descartes: his almost disdainful opinion of investigations in abstract mathematics; and in the technical *Géométrie*, composed owing to external pressure, Descartes seems to have returned to a stage of his thought which he believed that he had passed once for all (p. 115). One might have expected the work of Millet to have been mentioned at this place, but that is not done by M. Brunschvicg. Millet maintained that the invention of co-ordinate geometry was subsequent to that of the universal mathematics. That appears to be quite possible, and the invention of co-ordinate geometry, involving as it does the invention of a most beautiful mental picture of the mathematical idea of a function, that is to say, in the simplest case, a single constant relation which holds between any one of a set of numbers forming the range of "the independent variable"—pictured, in co-ordinate geometry, by the set of infinite points on a straight line—and a set of corresponding numbers—pictured by the set of points on a curve referred to the above axis. This picture seems to derive its beauty from the visualisation that it gives of the ability of mathematics to deal simultaneously with an infinity of data. Here we see most clearly the fundamental importance to mathematical philosophy of the notion of *any*.

With Malebranche, the Cartesian geometry became the reduction of geometry to algebra, and not merely the application of algebra to geometry (p. 132). Malebranchism and Spinozism were two divergent interpretations of Cartesian geometry (p. 198).

Leibnizianism proceeded from the infinitesimal analysis and marks a new stage in mathematical philosophy (p. 98). The relation of Newton to Leibniz is, in at least one respect, like that of Fermat to Descartes: Newton had merely technical ends in view, whereas Leibniz's discovery proceeded from a philosophical conception and became the basis of a general system (pp. 197-198, 226). The book—the third—on the infinitesimal analysis seems on the whole good. However, one would have expected in an erudite historical treatise such as would appear to be, in part, the aim of this volume some use to have been made of the published

investigations into the early manuscripts of Newton and Leibniz which relate to their great mathematical discovery. M. Brunschwig mentions them either hardly or not at all. The omission, as far as concerns Newton, is excusable if he follows Moritz Cantor's exposition: it is not so as far as concerns Leibniz. As regards the later fortunes of investigations into the principles of the calculus, it is good to find that M. Brunschwig follows the mathematicians rather than the philosophers, and is consequently just to Bishop Berkeley's ingenious polemic (pp. 194-196, 248). As for Leibniz's philosophy, M. Brunschwig does not quite agree with Messrs. Russell and Couturat that it is wholly logical in type (pp. 199, 204).

We now come to the second part of the volume, which deals with modern times. Here, probably owing to the lack of knowledge of good historical summaries of modern works, M. Brunschwig's erudition retreats from him still more. I will give a few examples. On page 247, Cauchy's critical remark on Lagrange's use of series without an investigation into their convergence is quoted from a work edited by Moigno in 1868 instead of being quoted, as it ought to be, from Cauchy's *Résumé* of 1823. The part on continuity with Cauchy and others (pp. 330-340) is so utterly superficial as to be valueless to anybody trying to form a view of this part of the history of analysis. M. Brunschwig's idea (pp. 354-368) that the "arithmetisation of mathematics" leads of necessity to nominalism seems based solely on the consideration of the work of Charles Méray, who happens to have been both an arithmetist and a nominalist, and the ignoring of the work of Weierstrass, Georg Cantor, and Dedekind, who were arithmetists without being nominalists. When sketching the history of symbolic logic, the work on the logic of relations of Lambert and De Morgan is neglected, there is no mention of the important differences between the Boole of 1847 and the Boole of 1854, and the account of Frege and Peano is very inadequate. M. Brunschwig's wish (p. 383) to show that the notion of transfinite ordinal numbers is not merely a dialectical construction but has its roots in the technique of analysis is surely a very praiseworthy wish, and one that would appeal strongly to those who have to teach something about these numbers to pupils. But the way he fulfils this wish is singularly unfortunate. He ignores completely Georg Cantor's work on "derivatives" of point-aggregates, which actually gave rise to the thought of these numbers, and is still by far the most "convincing" way of introducing the subject, and gives, as an example, an infinitary scale constructed by Borel on the basis of some indications due to Paul du Bois-Reymond. This example is confusing, above all to one who makes acquaintance with the transfinite numbers for the first time, for the simple reason that the thing which corresponds to the index ω is not determinate, as it is in the case of the "derivatives". On page 394, great stress is laid on the "resist-

ance" of Henri Poincaré, and the fact that, as M. Couturat pointed out, this "resistance" was due to an *ignoratio elenchi* is ignored. On page 398, it is said that the first discovery of logistics was that the principle of identity, on which all logic used to be based, is only one among the logical principles, and perhaps the least useful of all. This is the merest superficiality: this "discovery" was made certainly by Hegel and probably by others before him. The uselessness of tautology does not require symbolism to make it evident. M. Brunschwig has the confusing habit of quoting the titles of the French translations of certain works with the date of publication of the English or German original. This increases the labour of any one, who, with a just suspicion of M. Brunschwig's accuracy, tries to verify references. Such labour is also increased by such a reference as that on page 393: "*Mind*, p. 523 *et suiv.*" I will leave for a short time the easy task of pointing out M. Brunschwig's sins of commission and omission, and will try to give an account of the view taken in the second part.

The logic of Euclid and Archimedes, in which spatial intuition was utilised for the constitution of the initial definitions and for the putting into shape of the axioms and postulates, survived the attempts to build up a logic of mathematical analysis which should be independent of spatial intuition, to which the discovery of the infinitesimal calculus gave rise. With Kant, space remains the necessary mediator for the connexion between the abstract relations which constitute science and the empirical facts which constitute reality (p. 341). Fichte, and perhaps all the post-Kantians, failed to keep their doctrine of mathematics in close contact with the course of living science, and, from the author's point of view, the heir of Kant's thought is neither Fichte nor Hegel nor Schopenhauer, but Auguste Comte (pp. 282-283). The mathematician Fourier, on account of both his close friendship with Comte and his great advance in mathematical physics, exercised, in company with Lagrange, a preponderating influence on Comte's thought. Fourier was of the opinion that mathematics was merely a tool for the physicist, and Comte followed him (p. 296). Fourier's great researches were on the theory of the conduction of heat, and Comte's physics was divided into mechanics and "thermology".

Soon after the first volume of Comte's *Cours de Philosophie positive* was published, there came a transformation of the scientific bases. Cauchy transformed pure mathematics—we have, above all, his new theory of the "continuity" of functions—Lobachevski transformed classical geometry, and Sadi Carnot—so says M. Brunschwig somewhat inaccurately—began the transformation of general mechanics (p. 304); and we accordingly have two chapters on non-Euclidean geometries and on mathematical analysis and continuity.

The fifth book is on the evolution of arithmeticism, which M. Brunschwig thinks—on insufficient grounds, as I have shown

above—necessarily resulted in nominalism. The sixth book is on "the logistical movement". "Arithmeticism must be considered as a movement which . . . appears to be ordered by the nature of the human mind, since it is the same movement which we have seen go from Pythagoreanism to Aristotelianism. But the formal logic of Aristotle is the prototype of the contemporary logistics: at the contact of modern methods and by imitating the perfected algorithm of mathematics, logistics has shown a suppleness of analysis and a care of rigour from which the Aristotelian logic was very far removed. Logistics is certainly a new technical discipline; the philosophy of mathematics that certain thinkers (Mr. Bertrand Russell in the front rank of them) think they can deduce from it is certainly, in spite of its fidelity to the ontologism of Aristotle and Scholasticism, a new event" (p. 369; cf. p. 342). This candid admission that Mr. Russell is not entirely mediæval must be most gratifying to him: at least it is an admission that some of his German mathematical critics have not yet made. But why should Mr. Russell be considered to be a neo-Aristotelian or scholastic? M. Brunschvieg makes this clear.

It is hardly an exaggeration to say that on almost every page in the sixth book there is at least one futility. Perhaps the greatest is the attribution to Mr. Russell of a sort of neo-Aristotelianism, of a belief in the "substantiality" (p. 390) of the class. M. Brunschvieg often mentions (pp. 399, 401, 423, 424) the *Principia Mathematica* of 1910; and yet he does not seem to have grasped the fact that all Mr. Russell's work since about 1905 has proceeded without the assumption that there are any such things as classes at all, and that a great part of the first volume of the *Principia* is devoted to a systematic exposition of the theory of incomplete symbols, which is the basis of all Mr. Russell's modern work on the principles of mathematics. But this is not the worst. M. Brunschvieg attributes (p. 407) the "final shipwreck" of mathematical logic to the contradiction of which a form was discovered by Mr. Russell. We know that at one time there seemed, to one eminent German, a prospect of a shipwreck, not only to mathematical logic, but to all mathematics. We know now that this danger has passed. But M. Brunschvieg believes that this fictitious shipwreck was caused by a difficulty which, since he twice translates "it is" by "il y a" (p. 407), is nonsense. In view of this, it is doubly surprising that M. Brunschvieg should twit the realists with credulity, and point out (p. 410) that their difficulties with the man who says "I lie" arise from that politeness which is based on credulity.

Briefly speaking, the critical part of this book may be described, it seems to me, as follows. With the purpose of throwing light on a problem which he misconceives, M. Brunschvieg employs inaccurately an irrelevant method. The case is analogous to that of the kind old foreign gentleman who thought that some mechanics

would be helped in the making of new locomotives if a Life of James Watt was read aloud to them. So he did so, though unfortunately there were many words he mispronounced and many sentences he did not understand. M. Brunschvieg's learning, besides being irrelevant to his present purpose, does not seem to be either useful or harmless for other purposes. Learning, we know, is harmless in the learned, and most useful where it is least found—in teachers and learners. Most teachers, in fact, are disinclined to learn, and most learners suffer under the disadvantage of being taught by teachers.

The seventh and last book contains M. Brunschvieg's own conception of intelligence, which is suggested by the actual development of mathematics. Arithmeticians and cultivators of mathematical logic have tried to surround the system of modern mathematics by a net-work of *a priori* forms, and their attempts resulted, on the one hand, in nominalism, and, on the other, in empiricism (p. 427). The intuitionist movement has determined a new "*étape*" in the evolution of mathematical philosophy, which is consecutive to the "ruin of the purely formal conceptions which proceeded from *arithmeticism* or *logistics*" (p. 460). But the philosophy which corresponds to this new stage can only succeed in taking a coherent and positive form if it goes beyond the notion of intuition. For this purpose, M. Brunschvieg makes use of his twofold experience of the history of philosophy and of that of science (p. 460). After discussing the roots of arithmetical, geometrical, and algebraical truth, M. Brunschvieg concludes with a chapter on the reaction against mathematism. One would think that, owing to the valuable critical work of M. Couturat on the objections raised against "logistics" by such intuitionists as Poincaré, the irrelevance of the intuition to questions of mathematical logic had become a commonplace in France. Such, unfortunately, does not seem yet to be the case, and it is therefore a reviewer's duty, when writing a notice of a volume which, by its appearance of thoroughness and careful discussion, makes a serious bid for consideration, again to point out this irrelevance.

PHILIP E. B. JOURDAIN.

Eternal Life: a Study of its Implications and Applications.
Baron F. von HÜGEL. Edinburgh: T. & T. Clark, 1912.
Pp. 1, 443.

BARON VON HÜGEL's volume is sure of a warm welcome from its readers both because of its value as a study in the philosophy of Religion and for its merits as a genuinely devotional work of the best kind. It is, of course, only in the former capacity that it can be dealt with in the pages of this journal. As a study in religious

Philosophy it has the first-rate importance of being written not, as so many contributions to *Religionsphilosophie* seem to be, from without but from within. Its affinities are not with monographs on the mental life of bees or ants, but with the classics of self-examination and introspection. What is put before us for our study is not something which it may suit the possibly personally irreligious but conscientiously system-making philosopher to call "religion" for the purposes of his scheme of things, but the implications of religious life as actually led by a faithful member of a great communion, and at once sustained and controlled by the culture and tradition of a church deeply rooted on the abiding needs of humanity as they are witnessed to by history. It is this independence of "private judgment," in the bad sense of the term, which before everything else strikes me as giving Baron von Hügel's book its singular value. One is sure that in studying religion, with him for a guide, one is dealing not with what one individual with the peculiarities of individual temperament has found an adequate faith, but with something which has proved sufficient for the needs of countless myriads of all shades of intellectual and moral difference. Further, it is noteworthy that the book has throughout the note of universality or catholicism in a still deeper sense. Its author stands at the farthest possible remove from the temper of those who can be satisfied with a division of the faiths of mankind into one which is *true*, their own, and a multitude which are false. Writing with full conviction that his own confession presents a richer and fuller type of spiritual life than others, he is constantly on the search for the element of truth, the apprehension of a universal verity, in all the beliefs by which men have found it possible to face life and death. From the philosophical side, we might say, the task he has set before him is to look for the witness of all the religions and all the philosophies to fundamental verities which find their completed expression in action in the provision made by historical Christianity, and more especially by the great Roman communion, for fostering and advancing the development of spirituality in persons. Thus his treatment of philosophical thought and religious life outside his own communion is permeated by that spirit of true charity which is the very antithesis of the shallow indifferentism which only too often claims the name. (I would refer, in particular, for illustration to the unqualified recognition of the true spirit of personal piety in the judgments passed on Spinoza and Schleiermacher, and to the sane and generous appreciation of the aspiration after a faith which lies beneath the violence and crudities of Nietzsche.) I would also congratulate the author on the skill with which he has steered clear of the rock of over-simplification. It is with a true insight that he insists that just because the function of religion is what Prof. Bosanquet has called soul-moulding, the spiritual life is necessarily for man one of tension between antitheses, neither of

which can be simply ignored. Thus he rightly insists against over-strained Idealism in philosophical theory and one-sided Puritanism in religious practice, that a durable religion cannot afford to concentrate itself on the soul to the neglect of the body, or on the individual to the neglect of the community, and infers rightly, as I think, the necessity of an Institutional factor of culture and symbolism for a complete religion. Yet he does not make the mistake, so common in our own days, of supposing that the spiritual life can be resolved wholly into one of social community and social service. It must find its expression in these activities, yet it draws the extraordinary energy which it infuses into work for communal betterment from its moments of utter and complete "inwardness" and detachment from every "creature". It is the necessity of combining the burning sense of social duty with such a temper of detachment which makes it so hard "to be a Christian," and yet that the thing can be done is proved sufficiently in practice by the exceptionally strenuous social activity of such great mystics as St. John of the Cross and the two Catharines. The same sense for wholeness shows itself in the exceedingly interesting chapter (ch. xii.) in which Baron von Hügel discusses the five great problems, each depending on an unavoidable antithesis between equally justified tendencies, which are just now particularly agitating his own communion, the conflict between the demand for the freedom of philosophising and the tendency of the authorities to give the sanction of the Church exclusively to the scholastic fusion of Aristotle with Proclus, the conflict between the claims of historical criticism and the necessity of a permanent nucleus of historical data for the Faith of the Church, the antithesis between the need for unity and the duty of toleration, the conflict between the claims of canon law and the rights of the sovereign state, and the more general conflict between the claim of religion to concern herself with politics, no less than with other affairs of life, and the deep-rooted modern hostility to the interference of the "priest" in "secular affairs". Baron von Hügel naturally deals with all these difficulties in the acute forms in which they exhibit themselves in the attitude of the Vatican towards "liberal Catholicism" and towards the "lay state". But, in one form or another, every one of the problems exists, or show signs of appearing, in all the more considerable Christian communions. Thus in the Anglican Church we have already our own "modernist" difficulties, the trouble about the respective claims of "Church's Law" and the "law of the land" is already on us in connexion with such questions as those of divorce and "forbidden degrees," and all forms of Christianity have the persistent hatred of the "priest in polities" always with them. Yet only the relatively few who can be content to be either "whole-hog" secularists or unqualified sacerdotalists can make an easy way out of any of these difficulties by simply suppressing one side of the antithesis, and thus the author's treatment

of these problems has a real interest for a much wider community than his own Church.

The general position of the author may be briefly summarised as follows. In the life of the lowest animals we have a kind of experience which perhaps rises little above the category of monotonous uniform "succession" or "clock-time". In the higher animals and specially in man this monotony is, if ever, only reached in the least significant of all vital phases, deep sleep, dull reverie in which there is no continuous and progressive development of subjective interest or attention. The character of characteristically wide awake human life is that which Bergson describes as *durée réelle*, succession which appears to vary in rapidity and concentration with the various vital activities and interests. But, besides merely successive and merely durational experience, religion and philosophy in all ages have conceived a kind of life which they attribute in the fullest sense only to God or the gods, an experience which is *totum simul*. The great aim of religious and practical philosophies is to teach us so to reorganise our personality that, through an immediate contact with this strictly eternal life of God, we may in our turn develop in ourselves a derivative "eternal" life, which, however, precisely because we are and must always remain creatures, has to display itself within the form of "duration". Thus the main point is that the distinction between "eternal" and "temporal" life is not identical with that between the "present life" and "the life to come". The distinction is between two contrasting polarities which exhibit themselves in the actual present life of the religious man, a life that, in fact, derives its peculiar character precisely from this tension between "worldliness" and "other-worldliness" or rather "unworldliness". Immortality—the doctrine that for the creature man the durational aspect of life persists as essential after the death of his present organism—is a secondary consequence based on a right understanding of the way in which the "eternal," for a creature, implies the "durational" as its necessary complement. The primary matter is the quality of such derivative eternity, its *quantity* is secondary. In the course of the work most of the great philosophical and religious constructions of the Western world come in for penetrating, though always sympathetic criticism. I would comment in particular the insight shown in the criticism of Spinoza, and the powerful handling of Kant's theology, in which, as Baron von Hügel well shows, religion almost ceases to be genuinely religious precisely because Kant insists on finding its sources wholly in ethics, to the neglect of ontology and cosmology, just as many other eighteenth-century writers attenuate it equally by looking to "nature," exclusive of the social life of man as the one source of revelation of the divine. The criticism of some of Bergson's curious paralogisms is also excellent, though I could wish it had been a little more detailed. Baron von Hügel rightly

sees that there are false positions taken up in the *Données Immédiates de la Conscience* which lead to fundamental misconceptions from which Bergson never really gets away in his later volumes. In fact he finds in him much the same fault which Socrates found in Anaxagoras. In his *durée réelle* he has elaborated more fully than any of his predecessors the very conception required to provide the true "form" of derivative eternity, but somehow seems to have no adequate sense of its applications. I think further inquiry would reveal that the source of most of the defects noted by the author lies in one or two very simple fallacies about measurement which are enunciated with utter *naïveté* in the very first chapter of the *Données*. Thus it seems to be assumed there (1) that nothing can be quantitative *unless* you can construct a scale of measurement for it; (this has a great deal to do with the allegation that psychical facts cannot be quantitative); (2) that because there are qualitative differences between the various portions of *durée réelle*, there are *only* qualitative differences between them; (3) that, even in spatial measurement, there is only one kind of measurable magnitude, *viz.*, the length of a straight line. Every one of these assumptions, which would be highly important if true, seems to me false. As to (1) it is by no means clear that wherever a "more" and a "less" of something can be found, measurement is possible. For measurement implies the possibility of introducing standards and units, and it is not obvious that these can be found throughout the whole range of the more and the less. Thus intensities of pleasures and pains, of emotional stress and the like are clearly magnitudes, since you can commonly say of two pleasures, or two pains, which is the more intense, of two moods of emotional stress which is the most violent, but there seems to be no means of devising unit intensities. Hence we must not hold that psychic facts are purely "non-quantitative" because most of them cannot really be measured. As to (2) there is no reason in the world why quantitative and qualitative differences may not co-exist between the same terms. Such a contrast as that drawn by Mill between a "little of" a "higher" pleasure and a greater amount of a "lower" is an elementary example in point. It would be psychologically false to deny that there is a real meaning in saying that I may get an intenser pleasure from eating a lump of sugar than I do from listening to a political address. And as to (3) Bergson seems to forget that in geometry we measure not only straight lines, areas and volumes of rectilinear figures, but also, *e.g.* angles, and that angular measurement at least is not reducible to any combinations of measurements of straight lines. Hence his theory that "real duration" is in its own nature non-quantitative, together with all the consequences which rest upon the theory, appears never to have been properly established. If I might suggest a criticism it would be that Plato perhaps, alone among the great philosophers, gets rather less than his due. The precise

distinction which Baron von Hügel wants between the simultaneity of God's experience and the derivative "eternity" exhibited in combination with duration which belongs to "creatures" might have been found in the *Timaeus* where the "created gods" and "souls" are twice declared to be "immortal" not in their own right, but in virtue of the will of their Maker, and time, as Aristotle notes, is made to be the characteristic form of the life of the "soul of the world" as eternity is that of the life of the Creator. Nor should Plato be accused, as he is on page 37, of "distressing insensibility to the odiousness of certain Pagan vices". Baron von Hügel has surely forgotten the language of disgust with which these aberrations are referred to in the *Phædrus*, language so plain as to be hardly bearable to a modern ear, and the enforcement of the strictest Christian ideal of purity in the *Laws*. φιλοσοφία, to its credit, set its face against these things from the first, though it would have been a dereliction of duty in the Hellenic world to bury them in silence. Indeed, it is not so clear that our habit of pretending that the same things are non-existent among ourselves is altogether a gain to morality. Against such little occasional asperities, however, let me hasten to set such a remark as the following about Darwin, which much more truly exhibits the large charity of the writer: "Darwin's rapt interest in the interrelated lives of plants and insects, in a bird's colouring and a worm's instincts, are, in their grandly self-oblivious out-going to the humble and the little, most genuine flowerings of the delicate Christian spirit in this fierce, rough world of ours. Without such real love, bridging over such real differences between realities possessed of varyingly deep inner lives, such studies instantly become impossible, or dry and merely ingenious, or weakly sentimental." (p. 281.)

A. E. TAYLOR.

VII.—NEW BOOKS.

A First Book in Metaphysics. By WALTER T. MARVIN. Published by
The Macmillan Company. Pp. xiv, 271.

THE present work is meant as a text-book for students, and contains copious lists of authors for concurrent reading. It is written in a simple and rather conversational style, not without Americanisms. The writer's views are those of the Six Realists of whom he is one. The two other general influences are James as to the nature of consciousness, and Bergson as to evolution.

Philosophy deals with indefinable notions and indemonstrable propositions on the one hand, and seeks for the highest possible generalisations on the other. Metaphysic is that part of philosophy that deals with the real as distinct from the ideal. This would cut out Metaphysic of Ethics altogether, and consistently the author does not touch it. But it would also seem to cut out Logic which he does treat.

In the third chapter the nature of what is known is discussed. What we know is always a relation between two or more entities. To direct awareness of terms he denies the name knowledge. I do not think the author makes himself clear on the distinction between 'acquaintance with' and 'knowledge about,' though he uses the terms. Since what we know when we have knowledge about anything (in which case alone does he use the word knowledge) is a proposition, and since he also says that it is a relation between terms, he is forced to call a great many things propositions to which no one could normally give that name. Thus the universe is defined as 'the true and complete explanation of all facts,' which makes the universe consist of a collection of propositions, whilst what it actually is is the entities and relations which these propositions are about. In fact when we know that xRy what we know is neither merely R nor the related complex (with both of which we can of course be acquainted), but that R relates x and y in this complex. The author says that anything exists if it is a part of the universe; but how can the parts of an explanatory theory exist? They can of course be propositions that assert existence; but this is a very different matter.

Some truths are perceptible. These are called facts apparently when the terms are particulars which are themselves perceived; if the terms are universals the truths are *a priori* propositions. Perception in this wide sense is the ultimate test of truth, and coherence is only an application of one important perceived truth—the Law of Contradiction. What I should prefer to say is that direct acquaintance with certain complexes gives rise to judgments of self-evident propositions about the relation of their terms. The author dismisses and rejects the rival theory that all analysis involves falsification and that coherence is the sole test of truth.

In the discussions which occur in various parts of the book on the subject of the reality of perceived objects (notably in chaps. iv. and xvi.) not enough answer is made to the difficulties of naive realism. The

author always thinks that there is no alternative between the objects of perception being physical and their being mental. He has no difficulty in showing that there is not the smallest reason to think that they are mental in the sense in which the perceptions of them are mental, and therefore concludes that they are physical. But there are at least plausible grounds for thinking that they cannot be physical in the sense of being existentially and qualitatively independent of their percipients. His only attempt to meet the difficulties that suggest such an intermediate order of existents is to say that there is nothing impossible in the same thing having one set of qualities in one relation (*e.g.*, when seen), and another in other relations. But the real trouble is that it may stand in two sets of relation at the same time (*e.g.*, to sight and touch), and then have incompatible qualities; as when the top of a cup seen as an ellipse is felt as a circle.

Nominalism and realism with regard to universals are discussed in chapter x. and the latter is accepted. I have some difficulty in following the author's use of the terms subsistence and existence. He makes true propositions and relating relations exist; and the latter at any rate is in accordance with ordinary speech. Apparently he holds that false propositions subsist; but he naturally does not enter this maze in an elementary book. But I understand that he would make the relations and propositions of non-Euclidian geometry existent; and here he seems to depart a good deal from ordinary usage.

In the chapter on Causation the statement that causation is reducible to implication and the placing of causal laws on a level with laws of what is eternal, as those of mathematics, seem to me liable to mislead students into thinking that ordinary causal laws have the logical necessity of those of pure mathematics.

The twelfth chapter on Evolution shows the influence of Bergson, though it compares favourably with that confused writer. Our author says that it seems probable (though it is not logically necessary) that there are existential propositions referring to later moments of time which cannot be inferred from any selection of propositions referring to earlier ones. Whilst this may very well be true the further statement that the future differs essentially from the present and past, and not merely *quoad nos*, seems to me quite groundless. In the first place there are probably plenty of causal series which have come to an end, and so there are existential propositions about earlier moments that cannot be inferred from any selection of propositions referring to later moments. Secondly, I do not see why the past has a better status than the future; no doubt some of the past *has been* perceived, but then it is equally true that some of the future *will be* perceived. And it seems to be purely a matter of our subjective limitations that some of the past *is now* perceived, and that none of the future is; even if the latter be true—which I should hesitate to assert.

Theism and Theology as a Metaphysic are discussed in chapter xiv. and its appendix. It is a pity that Dr. McTaggart's most excellent book, *Some Dogmas of Religion*, is not recommended for further study of the hypothesis of a finite God. Dr. Howison's essay might also have been mentioned.

In chapter xv. the Substance Hypothesis is discussed. It is referred to the subject-predicate theory of propositions, and this is of course rejected. I doubt whether the subject-predicate theory was often so silly as to hold that 'propositions are made up of two terms and no relation,' as we are told on page 172. Substance, however, is mainly rejected on the ground that it explains nothing; but one wonders whether it was ever meant to explain anything. The general theory of terms and rela-

tions explains nothing in particular ; and in one sense at least of substance terms are substances.

Chapter xvii. contains a severe criticism of Epistemology regarded as the basis of metaphysic. But its claims are put much too high ; I do not think it ever hoped to do more than to give limits to science and speculation ; though perhaps parts of Kant's *Metaphysical Bases of Natural Science* might be quoted against me.

The last part of the book is devoted to the philosophy of Logic, Mathematics, Physics, Biology, and Psychology. It contains some errors. On page 223 the two entirely different forms of the syllogism in Barbara are by implication confused. Again it is said that the special sciences use logical principles as premises just as chemistry might use physical principles as premises. This shows that the author has not grasped the important distinction between the use of a logical axiom as a premise and its use as a principle of reasoning. I do not suppose that the syllogism is ever used as a premise in any science but logic and pure mathematics ; though it is used as a principle in all sciences.

In Psychology the author takes up James's view about Consciousness developed in the essay, 'Does Consciousness Exist?' This extremely paradoxical theory is not rendered less so by anything in this book, and it seems unwise to state it dogmatically to beginners. There are some very odd arguments in favour of the view that it is necessary for Psychology that our mental states should not be private to ourselves. If they were, we are told, it would be useless to write books on psychology. But it would only be useless if we had *nothing* in common ; if we have enough in common to make recognisable descriptions it is no more objection to psychology that we can *each* only perceive *some* mental states than it is to physics that we can *none* of us perceive *any* atoms. The author asserts in a note that the assumed privacy of mental life rests on the belief that we can know nothing but our own sensations. I should have thought that it rested on the tolerably obvious fact that we are not acquainted with those of any one else.

I have harped rather on points of difference, because in the main I am in agreement with the writer ; and I think that the book, supplemented by reading and lectures, would be a valuable introduction to Metaphysics for students.

C. D. BROAD.

Psychology : the Study of Behaviour. By WILLIAM McDougall, M.B., F.R.S. Home University Library of Modern Knowledge. London : Williams & Norgate, 1912.

THE importance of this little book is out of all proportion to its size. Written by one of our leading psychologists, and moreover by one whose original contributions to the science have been both numerous and varied, and of very great theoretical importance, the volume aims at setting out the exact position of psychology among closely cognate mental and physical sciences, and stating in broad outline the various fields of study which it covers. The author's standpoint is an original one. Defining psychology as "the positive science of the behaviour of living things," he admits that its province is coextensive with the province of physiology. He would differentiate the two sciences as at present studied by saying that "physiology investigates the processes of the parts or organs of which any organism is composed, while psychology investigates the activities of the organism as a whole, that is, those in which it operates as a whole or unit". The specific characteristic of "behaviour"

which makes it the appropriate subject-matter of a special science is "the dominance of the mechanical factors by purposive guidance towards a specific end or goal".

Dr. McDougall thus refuses to start with the conception of consciousness or mind in his analysis, but after first obtaining a firm objective basis for his science in the externally observable facts of behaviour, turns to introspection as merely a method of supplementing the knowledge obtainable from that source. Doubtless he would be willing to admit—indeed this seems to be his real view—that it is only through a study of consciousness that we acquire any thoroughgoing knowledge of behaviour in its essence and in its implications. He differs from his predecessors in the order in which he arranges his psychological data. It is not the historical order, since, apart from Aristotle, to whom he refers, psychologists have in the past looked upon the individual consciousness as the one justification for the existence of their science and its ultimate subject-matter, but it is the one justified by logic and the only one which holds out any hope of further progress of the science in relative independence of metaphysics.

Perhaps the most interesting chapter of the book, from the standpoint of general theory, is that on "The Structure of the Mind," in which an important distinction is drawn between mental faculties and mental dispositions. A faculty is here defined as "an ultimate, irreducible, or unanalysable mode of thinking of, or of being conscious of, objects," and under this heading are classed "striving," in its two ultimate forms of appetition and aversion, "feeling" or "affection," including pleasure, displeasure, excitement and depression, as well as the primary emotions, and "knowing," which comprises the ultimate faculties of awareness, affirming and denying, and comparing. Extension and duration are both classed as attributes of objects, and not regarded as implying the existence of special faculties of the mind. As distinct from these potentialities of thinking in general, the potentiality of thinking of a specific object is called by Dr. McDougall a mental disposition, and he shows in a very lucid way how these dispositions grow in number and become organised by processes of progressive discrimination and perception of similarity to produce the body of knowledge possessed by an individual mind. He contrasts with these apperceptive processes which bring about a functional relation between dispositions corresponding to the logical relations between objects the processes of association which relate the dispositions in ways corresponding to the historical sequence of events, always under the guiding influence of some conative tendency. Of the relations between cognition and conation he writes : "These relations seem to be in the main of the nature of associative links, a complex system of cross-connexions between the dispositions of the two kinds," and in another passage : "Knowing is but the servant of feeling and acting; it is the process by which the will works towards its end and the satisfaction which comes with the attainment of the end". This view reminds one of Hume's dictum that "Reason is the slave of the passions," and rouses a similar antagonism. Thought enters too intimately into the development of will and of the higher feelings to make such a theory entirely convincing.

Other important chapters are those on Animal Behaviour, Childhood, Abnormal Psychology, and Social Psychology. Particularly interesting is Dr. McDougall's account of the views of Janet, Freud, and others on the nature of hysteria and other forms of mental abnormality, and I cannot refrain from one last quotation in which he comments on the relation between the conscious and the subconscious. "We must recognize," he writes, "that the relations of subconscious operations to conscious think-

ing are in many cases so intimate, so much of the nature of participation in the working out of a single purpose, that any such division of the mind into two unlike parts, such as is commonly implied by names of the kind mentioned above, appears wholly unwarranted." This is a reminder that many theorists on the subject would do well to heed.

W. BROWN.

The Metaphysics of Historical Knowledge. By DEWITT H. PARKER. University of California Publications in Philosophy. Berkeley. Pp. 83.

The past does not exist, but can be known as having existed. And *qua* known, it possesses being, though not existence—being like that of eternal truths, for example. It is known by representative knowledge, in which immediate experience directs thought to the object; acts, that is, as an "objectifying idea". But there is a difference of kind between memory, which is more presentative, and report, which is more representative.¹

The author holds himself bound to defend in some degree the representative theory of knowledge, as I think, unnecessarily, for he does not really employ it, though he sometimes insists on the contrast of "presentative" and "representative" in a way which I do not understand.

Change and becoming are ultimate categories, against which no criticism holds. Time is a series, but, in deference to Bergson, not a "punctual" series. We observe it in the content of facts, not merely in the transitions of consciousness. We are aware of loss and disintegration. The remark on optimism in this place I thoroughly assent to. Still, I suggest, gain is also possible, and loss brings a kind of completeness. "If I go not away ——" Time is co-extensive with experience, which again is co-extensive with existence. "Even if the universe were to fall asleep and then waken, there would be no lapse of time [i.e. no gap in time, a strange usage], for there is no time where there is no existence," i.e. the ends of the conscious periods would join. It is interesting that the author should assume that there can be no existence while the universe is asleep.

Times in fiction cannot be used to show the possibility of more than one time, for only real time counts, and it is confined to existence. This seems to me to admit what it denies.

Existence of the past, we saw, is what the author selects for denial—persistent spatio-temporal existence. He states the doctrine by citing a passage from Lotze (Parker, p. 140; Lotze, *Metaphysic*, E. Trans., 258), which depicts an existing S as having all the past S's beside it. Lotze is here suggesting an absurd consequence which might imaginably be ascribed to the doctrine that time is unreal, but, in his opinion, without logical justification. I do not think it is clear how Mr. Parker means to use the passage. I never saw the thesis maintained which he appears to be criticising.

Doctrines which take the past as transmuted in the Absolute or contained in a huge specious present are ruled out of the discussion; but the former is more than once referred to with the gloss which I have noticed in other American writers, that the Absolute is a subject of knowledge, a sort of omniscient being. This again I have never seen maintained.

What, it is asked in conclusion, is historical truth, and how does truth be or exist? Is it psychological explanation or individual appreciation? The answer is, Both; it is explanation and individual portrayal, the latter approaching the nature of art (cf. Croce). A difficulty seems to be needlessly

¹ The author kindly informed me in answer to my inquiry that on p. 108, ll. 22 and 24, the words "first" and "second" are transposed by mistake.

raised by speaking of history as a science. In fact, surely, the true narrative judgment (and history as such must be narrative) is inherently debarred from containing scientific truth, and the science and portraiture in history are like oil and water.

Historical truth *is*, as eternal laws *are*, not in any existence. And here a significant question is relevant, which is raised in an earlier chapter. We can know the past more thoroughly than it knew itself—as better or worse than, as seemed in and to the past, it *was*. Here we are referred to a distinction between essence and existence. "Kant as understood is not Kant's past existence, but Kant's ideal and eternal essence." It is the well-known view that the truths about a thing do not belong to the thing. Yet surely they must reveal characteristics of the thing. A man's *real* thought is as much a fact in his life as the date of his birth; and if we state it wrongly, we speak falsely. Therefore it does seem as if the past were always being transmuted *from* what we took to be its existence *into* true existence. I can hardly understand how "existential and ideal truths" can be "side by side and at peace".

The author indeed holds that the essence of all changing experience is an eternal reality. If we could push home the problem of the relation of existence to this reality, we should get more light on the "being" of the past.

The tractate raises a number of stimulating problems—more, as it seems to me, than were really necessary for arriving at its conclusion stated above; which appears perfectly sound, if the investigation is not carried into the problem which the author sets aside.

B. BOSANQUET.

Plato: Moral and Political Ideals. By A. M. ADAM. (Cambridge Manuals of Science and Literature.) Cambridge University Press, 1913. Pp. vii, 153.

In the growing interest in Plato as a metaphysician and theorist about the foundations of mathematics there is a possible danger that his immense importance as a moralist and a trainer of statesmen may be unduly overlooked. Hence a little work like that of Mrs. Adam which expressly confines itself to the exposition of the ethical and political ideals of the great philosopher is exceedingly opportune. In the main I would warmly recommend the little book, the general standpoint of which is naturally much the same as that of the lamented Dr. Adam's great edition of the *Republic*. Two points, however, call for some remark. Mrs. Adam has given a very fresh and accurate account of the ethical content of the dialogues down to, and inclusive of, the *Theaetetus*. But after all Plato's ripest practical wisdom is to be sought in works which fall outside these limits, notably in the *Laws* and *Philebus*. The *Laws* are mainly drawn upon in the present volume for matters of detail in which there is some disagreement with the *Republic*, and the *Philebus* is only appealed to once, and then not on an ethical but on a metaphysical point, the dubious identification of God with the *ἰδέα τἀγαθοῦ*. This means that some of Plato's most important ethical positions, such as e.g. the criticism of pleasure, and the doctrine of the mean, as well as his matured verdicts on the types of political organisation cannot be adequately represented. It is perhaps a consequence of this comparative neglect of Plato's latest social and ethical works that his personal intervention in the affairs of Sicily and its consequence in making the Academy a recognized source of actual legislation receive no notice. The other point is that Mrs. Adam accepts (though with a word of warning in her Preface) the loose current accounts of Plato's relation to Socrates, and even outdoes them. The im-

mediate result of this is that Socrates becomes a highly problematical figure in the story. Even the identification of virtue with knowledge ascribed to him by Aristotle and presupposed in Plato in the constant appeal to the analogy from the "crafts," is held to be a "development". This is on the strength of a well-known *mot* of the Socrates of Xenophon, that when one wants to know the upshot of an adventure one must go to an oracle. Now Xenophon does not say, as Mrs. Adam makes him say (p. 39), that "all judgment and forecasting whether any given action is *good in itself* (italics mine), and likely to be beneficial in its results," is beyond the province of human reason. He only says that there are many actions of which human foresight cannot decide whether they will be profitable in their results, and that for light on that point one must "consult the oracles". That human reason can judge of the "goodness in itself" of an action is assumed throughout the *Memorabilia*. It is the very reason why Socrates is represented at III. 9 as holding that virtue can be "taught". Hence the intrinsic goodness of actions belongs for Xenophon's Socrates to the sphere of *ἀ μαθόντας ποιεῖν ἔδωκαν οἱ θεοί*, and there is no ground to appeal to Xenophon as evidence that the doctrine "virtue is knowledge" is "development". I note also that owing to the assumption that "Socrates" in the dialogues may always be taken to mean "Plato" Mrs. Adam falls unconsciously into the chronological error of thinking of Plato as personally an opponent of "sophists". Properly speaking, of course, the whole sophistic age, with its well-marked moral characteristics, ended before Plato had grown out of boyhood. If we wish to illustrate his educational theory and practice by contrast, it is not to the peripatetic lecturers of the fifth century, but to the ideal held up in the works of Isocrates that we should give our special attention. To appreciate Plato aright we have always to remember that he belongs to the time of Eubulus and Isocrates, not to that of Protagoras and Pericles. If Mrs. Adam had kept this steadily in mind she would probably have judged less favourably of the attempts to credit Plato personally with the bitter attacks on "democracy" in the *Gorgias* and *Republic*. For it is quite a definite species of democracy which is in question there, the Imperialistic democracy of Pericles and his successors which made the Peloponnesian war and ruined itself by its aggression in Sicily. The "democracy" under which Plato's works were written was quite another affair, and this, no doubt, is why democracy is spoken of so much more favourably in the *Politicus* and *Laws* where the verdict is not pronounced by Socrates, and does not refer specifically to a "Jingo" democracy.

A. E. TAYLOR.

Heredity and Memory. By Prof. JAMES WARD, D.Sc. Cambridge University Press, 1913.

In this "Henry Sidgwick Lecture," delivered at Newnham College in 1912, Prof. Ward deals with heredity in terms of memory, urging that Dr. Francis Darwin, following Hering and Semon, was amply justified in contending "that ontogeny—the building up of the embryo—is actually and literally a habit". It is true that in the chain of individuals which any given genealogical sequence has entailed, habits, in this broad sense of the word, are transmitted through the fertilised ova. But if, as a matter of fact, the more stable habits acquired by one generation are so transmitted to the next generation, through the germinal bridge which connects them, what more is needed to establish the theory that, provided only we look at the world of life from a spiritualistic and not from the usual naturalistic standpoint, the secret of heredity is to be found in the facts of memory? This involves, no doubt, the identification of life

and mind. But the principle of continuity gives us, says Prof. Ward, the right to do this. If it be urged that, on this theory, the earlier forms of retention are explained in terms of a later-developed mental product—the lower and simpler implying the existence of the higher and more complex—Prof. Ward replies that where, as in the case of life, we are seeking to interpret the meaning of a continuous series we must start where that meaning is clearest, where it is best known and most definite, not where it is least known and most inchoate.

It will be seen that Prof. Ward opens up several controversial questions. They are treated with his well-known acumen and lucidity and from the standpoint with which his name is honourably associated. His vigorous defence of the inheritance of acquired characters is a valuable contribution to the philosophical discussion of this much-debated question. But one grows rather tired of general arguments on this side and on that. The matter will have to be settled on the basis of statistics collected with care and methodically discussed. Acquired characters must be so defined as to render the issue perfectly clear. Then, as the outcome of patient work, we shall get, if Prof. Ward is right, a definite correlation value for the inheritance of this or that acquired modification.

Whether memory implies pre-existing engrams or engrams imply pre-existing memory is a question that turns partly on definition of terms. But the answer depends perhaps in greater measure on a fundamental bias in method of interpretation—naturalistic or spiritualistic. Prof. Ward stands for the latter; and anything he writes on the subject is worthy of attentive consideration.

C. LLOYD MORGAN.

Socrates and Plato. By G. C. FIELD, M.A., B.Sc., Lecturer in Ethics and Politics at the Victoria University, Manchester. Oxford: Parker & Co., 1913. Pp. 40.

Mr. Field holds a brief for the Socrates of convention: 'It is an ancient mariner, And he stoppeth one of three'. That is to say he relies as portraiture upon Xenophon's *Memorabilia*, with the support, such as it is, of Plato's dialogues of search and certain remarks of Aristotle. The construction against which he is in protest is so highly speculative, and in the form in which it is set forth by Prof. Taylor often so needlessly provocative, that some of Mr. Field's arguments palpably strike home. He has made a real point from Aristotle, *Metaphysics*, 1086, B 2 which we have been too much inclined to treat as simply a ditto graph of 1078, B 28. He has used Aristotle's criticism of the communism of the *Republic* in a suggestive way. Did the historic Socrates, we may ask, treat what the Pythagoreans practised as an order of Knights Templar as an important 'social myth'? Elsewhere Mr. Field is less effective. While we incline to sympathise with his impression that the *Memorabilia* stands on a different plane from Xenophon's other Socratisca, he at least is bound to maintain with Prof. Burnet the unity of authorship in all. And it does seem to discount Xenophon's accuracy in this regard—the attempt to bring in the credibility of the *Hellenica* as a point against Prof. Burnet is merely perverse—that he says he was present when Socrates made allusion to the death of the younger Cyrus. There is a logical gap too in Mr. Field's argument from the *Magna Moralia*. It is 'a later work of the Aristotelian School,' and 'means that Aristotle and those who learnt from him' distinguished Socrates and the Platonic Socrates. Or again: the parallel from Jowett and Green could only have weight if Green had represented the *Prolegomena to Ethics* as the table-talk of Jowett. Mr. Field says little of Aristophanes and nothing of the

point made by Prof. Burnet as to the science of Socrates in the *Phædo* and the *Clouds*. It would be of interest to see what the rival constructionists can get from the fact of the double recension of the latter. I venture to think that Mr. Field makes too little of the real difficulty of the charge of introducing new *δαιπόνια*. Nor, in view of the whole data, is the retort as to the historical character of the *Phædo* adequate, that Plato could venture on a higher truth than fact, because his contemporaries were so well aware that it was not fact. Such a reading of the *Phædo* would still involve too unpleasant an aesthetic and moral paradox.

HERBERT W. BLUNT.

The Classical Moralists; Selection Illustrating Ethics from Socrates to Martineau. Compiled by BENJAMIN RAND, Ph.D. London: Constable & Co.; Boston and New York: Houghton, Mifflin Company, 1910. Pp. xix, 797. Price 10s. 6d.

This book will be found exceedingly useful by students attending a course of lectures, or reading a text-book, on the history of ethical theory. It is out of the question that they should check the lecturer or text-book by reading for themselves, *pari passu* even, only the most important works of all the great ethical thinkers. And the danger is that they end by gaining no first-hand acquaintance at all, and carrying away only ideas distilled at second- or third-hand. Hence a book like this fills a real gap. And, on the whole, the extracts are well chosen: the right things from the right men. Some, of course, like Plato, lend themselves much less easily to selection than others, and in their case there must always be a keen sense of fragmentariness and loss. And the more thoroughly one has studied a writer, the more one is inclined to regret the exclusion of this or that favourite passage. Against all such criticisms, Dr. Rand will, no doubt, plead with much force that it is impossible to satisfy all tastes, and that within the inevitable limits of space he has tried to do his best. Even so, I am not sure that the opening section from Xenophon's *Memorabilia*, bk. iii., chap. viii., deserves inclusion in preference to others which have been omitted, and it is certainly a pity that the extracts from Plato are taken exclusively from the *Republic* (one thinks of passages in the *Symposium*, the *Phædo*, the *Philebus*), and that there are no passages from Aristotle's account of friendship. On the other hand, the passages from Lucretius and Marcus Aurelius belong to those which one would not miss; and St. Augustine, Peter Abelard, Thomas Aquinas seem adequately represented for the needs of the ordinary student. The wisdom of wholly omitting Part iv. of Spinoza's *Ethics* may certainly be questioned, compared with, e.g., the disproportionate length of the extracts from Adam Smith. And many, no doubt, will feel that they could have done without fourteen pages of Richard Price. The inclusion of Beneke may be defended as drawing attention to a writer who is, probably, unduly neglected, and yet one grudges the space allotted to him (twenty pages) when one thinks how much of the work of greater men has had to be omitted. J. S. Mill is well represented, and the chapters from Sidgwick, Bradley, Green and Martineau will, it is to be hoped, have the effect of sending students to their easily accessible works. In short, notwithstanding some grumblings, one gladly acknowledges that Dr. Rand has discharged a very difficult task with uncommon success, and has produced a book for which the average student of Ethics has every reason to be grateful.

R. F. A. H.

The Metaphysic of Mr. F. H. Bradley. By HASTINGS RASHDALL, F.B.A.
London : Published for the British Academy, by Henry Frowde,
Oxford University Press, 1912. Pp. 27. Price 1s. 6d.

Students of *Appearance and Reality* should not miss this excellent paper on Mr. Bradley's metaphysical theory. Dr. Rashdall finds in this theory 'a fundamental and irreconcilable contradiction between three sharply opposed points of view' (p. 10), viz.: (1) Idealism, (2) Spinozism, (3) Phenomenalism. Under the heading of 'Spinozism' Dr. Rashdall attacks above all Mr. Bradley's characterisation of the Absolute Experience as an immediacy in which all distinctions of thought are 'merged' or 'transcended,' even the distinction between the thinker and the objects of his thought, and as a corollary he challenges Mr. Bradley's right still to describe in terms of consciousness or experience something which has 'no power of knowing either itself or anything else,' and which, in short, no longer being a self or person, can only be described as a 'neuter' and 'a thing'. Under the heading of 'Phenomenalism,' Dr. Rashdall urges some of the well-known difficulties which beset the relation of the Absolute and its Appearances, and he does well to point out the further complications which result from Mr. Bradley's statement in MIND, N. S., page 179, to the effect that there is no reality 'outside of and apart from the totality of finite mind'. Incidentally, there is criticism of a good many subordinate points, e.g. the identification of 'any fabric of coherent truth with reality' (p. 17); the principle of the transformation of experiences ('no piece of conscious experience can ever be banished from the realm of reality, or ever become, for a mind that truly knows, other than it was,' p. 17); the self-contradictoriness of relations (p. 21), etc. And there are brief references to the positive views with which readers of Dr. Rashdall's other works are familiar, such as the relation of the Divine Mind to lesser selves, the reality of the time-process, and the place of evil in a world in which there is also moral effort for the realisation of good. Altogether, Dr. Rashdall has given us, in brief compass, an extraordinarily interesting and stimulating paper.

R. F. A. H.

Moral Action and Natural Law in Kant. By E. MORRIS MILLER, M.A.
Melbourne : George Robertson & Co., 1913. Pp. 59.

If this little book, the author of which apparently holds a position at the Public Library, Melbourne, may be taken as a sign of a growing interest in the study of philosophy among the non-academic section of the educated public in Australia, it is much to be welcomed. In substance, it gives an account of Kant's conceptions of Moral Law, Natural Law, and Freedom in their relation to one another, and points out some of the chief difficulties which result from the extreme 'Dualism' of the realms of Nature and Freedom in Kant's Theory. The treatment follows, in general, the lines of E. Caird's work on Kant. I should say the author would have done his audience in Australia a greater service if he had weighted his pages less with technical terminology. Personally, I have found the last section of the book, entitled 'Developments,' most interesting, especially the last few pages on what the author calls 'Ethical Idealism,' which contain, *inter alia*, a plea for more adequate recognition of the individual personality than most of the current theories of the Absolute provide.

R. F. A. H.

Experimental Psychology and Pedagogy. By R. SCHULZE. Translated by R. PINTNER. London: George Allen & Co. 15s.

The chief value of this book lies in the large number (over 300) of admirable illustrations and diagrams, which probably give as good an idea of the apparatus of a psychological laboratory and of the method of using it as can be obtained outside of a laboratory itself. It should prove of great value to those who are unable to enjoy a laboratory training, and yet wish to read intelligently that increasing body of psychological literature which involves some familiarity with the methods of experimental research for its proper comprehension.

The book is especially intended for those interested in the application of psychological methods to the study of the child mind and to the problems of education. But it will also be useful to the student of general experimental psychology. Indeed a number of the experiments described have little direct bearing upon educational topics, and there is perhaps a danger of the uninformed reader supposing that a large amount of costly and complicated apparatus is necessary for experiments in educational psychology; the author scarcely gives a proportionately large amount of space to such experiments—often the most valuable—as can be done with no other apparatus than paper and pen, or at least with such simple materials as can easily be made by any intelligent experimenter.

The chapter upon Correlations is far from complete, but that is to be expected in view of the fact that the German original was published in 1907. Many of the results of experiments summarised in other chapters are also incomplete, and the applications to pedagogy are occasionally crude and unconvincing, but the author frankly admits the limitations of the book from this point of view. His chief aim, to illustrate methods, has been accomplished admirably.

C. W. VALENTINE.

Outlines of the History of Psychology. By MAX DESSOIR, Professor in the University of Berlin. Authorised translation by DONALD FISHER. New York, 1912. 8vo. Pp. ix, 278.

This is an adequate translation of Prof. Dessoir's book. Mr. Fisher appears to have had the advantage of the author's counsel, and he has rendered into very fairly readable English a work which did not easily lend itself to translation. The style of the later pages does not run quite so easily as that of the earlier part of the book, but I have noticed very few serious inaccuracies. There is, however, passage in a Prof. Dessoir's discussion of Plato's psychology—not in any case one of the most satisfactory parts of his book—where Mr. Fisher makes him say that it is because the soul contains *conceptual images* that it is able to apprehend universals; the German is 'begriffliche Gebilde,' which surely has a less mysterious meaning.

T. L.

La Prière: Essai de Psychologie Religieuse. Par J. SEGOND. Paris F. Alcan. Pp. 364. 7 fr. 50.

M. Segond, in an elaborate introduction occupying sixty-seven pages, sets out to define with precision what he understands by "prayer" and in what a psychological study of it will consist. Prayer is not merely a special request for a special object, it is an attitude of the religious life, or rather that life itself. A psychological study of prayer sets aside the external environment of biological, historical and physiological facts, in

order to describe prayer just as it appears to the souls who pray. The central factor is not a request. "Ou peut avoir l'attitude de prière, et ne pas 'exposer ses besoins'" (p. 36). The essential and characteristic note of prayer is to be found in "meditation" (recueillement). "Vague ou précisée, élévation vers Dieu ou conscience d'une présence indéfinie, demande ou stupeur, la prière implique toujours, même si elle se fait sensation et se manifeste comme ivresse dans la possession du bonheur ou de la nature, une réflexion, un commencement tout au moins de 'jouissance du centre,' pour parler le langage de quiétisme, un acte de 'recueillement' ou un abandon au recueillement. C'est là peut-être le caractère constant de la prière" (p. 42). This experience implies the feeling of a presence, and the surrender to this presence takes the form of soliloquy or of dialogue. Prayer, however, contains a request, which need not be for a material object, but for more complet spiritual surrender. Every prayer is a prayer of intercession; the praying soul feels its unity with other souls. This unity is subconscious. The type of prayer which is largely voluntary and intellectual is distinguished from "la prière affective," which invades the soul as a wave of indefinite emotion. The origins of prayer as experienced by mystics are subconscious. M. Segond reserves for a further work the analysis of the nature of the subconscious, but hints (p. 323) that in the views of M. Bergson a solution may be found satisfactory to the biologist, the sociologist and the psychologist alike.

Within the limits marked out by its author this book is a distinct contribution to the study of its subject. Perhaps this appeal to mystical experiences is too predominant, and it is open to question whether these experiences are always precisely such, or are interpretations rather than primary data. The first step in the investigation of prayer may well be just that which M. Segond has taken, but his next step must take him into the unknown. He who invokes the subconscious runs great risk of making a problem masquerade as an explanation; and an origin in the subconscious is no guarantee of quality. The carefulness and judgment displayed by M. Segond justify us in looking forward with interest to the completion of his inquiry, while its tendency and that of his recent book—*L'Intuition Bergsonienne*—enable us to divine in what direction his solution will be found.

ARTHUR ROBINSON.

Hegel. Choix de Textes et Étude du Système Philosophique. Par PAUL ARCHAMBAULT. Pp. 222.

Durkheim. Choix de Textes Avec Étude du Système Sociologique. Par GEORGES DAVY. Pp. 220.

Condorcet. Choix de Textes et Introduction. Par J. B. SÉVERAC. Pp. 223.

Ribot. Choix de Textes et Étude de l'Œuvre. Par G. LAMARQUE. Pp. 222.

Paris : Société de Éditions, Louis Michaud. Each 2 fr.

These four books belong to the series already well known—"Les grands philosophes français et étrangers". Without doubt the most arduous task fell to M. Archambault; it is difficult to write a short account of Hegel's philosophy, and not easy to make a selection from his works within moderate limits. The introduction is concise of course, but also

clear, and its readers are referred to an admirable source for further information—*La Logique de Hegel*, par G. Noël. The passages are selected from the translations of Véra and Ch. Bénard.

M. Davy's study of Durkheim's sociology is wonderfully good, clear in expression and packed with information. It is difficult to imagine a better introduction to the work of the famous sociologist than this little volume.

M. Séverac gives a vivid account of the life, writings and ideas of that ill-starred Encyclopédiste, Condorcet, whom he regards as the most complete expression of his age : "dans la mesure—et elle est large—où le xviii^e siècle en France forme un ensemble ayant des contours nets et une physionomie propre, ou peut dire que Condorcet exprime le xviii^e siècle tout entier".(p. 30).

The selections from Ribot are preceded by an appreciative preface by M. Pierre Janet and a sympathetic and most capable study by M. Lamarque. M. Ribot's works now extend to thirteen volumes so that a selection has its uses.

ARTHUR ROBINSON.

Ch. Renouvier. Essais de Critique Générale. Troisième Essai : Les Principes de la Nature. Paris: Librairie Armand Colin, 1912. Pp. lxv, 444.

It is hardly necessary to do more than call the attention of readers of MIND to this excellently got-up and moderately priced new edition of Renouvier's well-known *Essay*. Just at the present moment when *Naturphilosophie* is being brought again into honour by the votaries of natural science themselves, the reissue may be deemed particularly opportune.

Über Begriffe und Grundsätze die beim kosmologischen Beweise als bekannt und selbstverständlich vorausgesetzt werden. By Prof. Dr. CASPAR ISENKRAHE (*Wissenschaftliche Beilage zum Jahresbericht 1908-09 des Königlichen Kaiser Wilhelms-Gymnasiums in Trier.* Treves : Jacob Lintz, 1909. Pp. 95.

The above embodies the friendly but searching criticism which a professor of physical science feels it his duty to level at the cosmological proof of God's existence such as he finds it stated by Roman Catholic apologists who have adopted it from the manuals of scholastic philosophy in common use.

According to Dr. Isenkrahe most of the axioms taken for granted in this proof are open to objection. Thus, for instance, we find motion described as an "effect" and spoken of for all the world as though the old axiom "*cessante causa cessat effectus*" still held good as it did before the time of Galileo. A body (B) moving at a certain velocity reaches the point L. Here it does not stop but continues on its way towards the point M. Query : Does the continuation of the motion, i.e. the transit from L to M, considered apart, require a cause? Previous to Galileo the answer was "Yes," now, it is emphatically "No". According to mechanics in this case it would not be the motion but the cessation of motion which would imply a *mutatio* and hence require a cause. A mere uniform motion in which direction and velocity remain unchanged cannot be said to be an effect requiring a cause, unless of course it be certain that the present motion was preceded by a state of rest, a fact which would have to be proved.

Again, from the existence of the world, scholastics argue that something has always existed, i.e. that there exists an Unbecome, seeing that "*ex nihilo nihil fit*". Is this last axiom really self-evident? Cathrein (*Glauben und Wissen*, p. 51 *sq.*) indeed states that the ideas of cause and effect are correlative, and that every effect must therefore have a sufficient cause, in other words everything which begins must have an efficient cause, nothing being able to produce itself as nothing can act before it exists. But this is a mere assertion and no argument. What right has Cathrein to put "beginning" on a par with "effect"? The concept of beginning involves simply (1) non-existence, (2) existence, and (3) the idea of earlier and later; previous non-existence, subsequent existence, such is a "beginning"; all idea of "action" or "cause" is entirely foreign to it, and only to be reached by appealing to the so-called principle of sufficient reason. Of the exact difference between reason and cause Stöckl gives us a good idea when he says (*Lehrb.*, ii., pp. 87, 95), that wherever we find a consequence there must be a sufficient reason, and wherever there is an effect there must be an efficient cause. Accepting his statement as correct, whenever any one asks for the cause of a thing (T) we have a right to inquire why he holds T to be an "effect," and, similarly, if he asks for the reason of an object (O) we may inquire how he has come to look on O as a "consequence".

Some tell us that it is self-evident that everything, in order to exist at all, must have a sufficient reason. Is this really so? Chr. Pesch devotes a section of his *Theolog. Zeitfragen* to the history of the question whether God can be said to have any reason or cause. Among the authors cited who seem to lean more or less towards an affirmative answer are St. Anselm, St. Jerome, Marius Victorinus and Lactantius (*Deus ipse se fecit*). At the opposite extreme, however, we find ancient Doctors of undoubted orthodoxy who exclude from God all cause and even all reason, for instance St. Gregory Nazianzen, St. Basil and St. Chrysostom; the latter even seems to deny that God is *a se* and prefers to take refuge in utter nescience (*Oὐ γὰρ δέχεται λογισμὸς εἰδέναι πῶς οἷος τε οὐραὶ εἴναι μήτε παρ' ἀντίη μήτε παρ' ἔτέρου τὸ εἴναι ἔχοντας*). Under the circumstances can it be said that the universality of the principle of sufficient reason is really self-evident? Of everything that happens, of every fire, epidemic, etc., that breaks out, we naturally inquire how it came about, but may we, indeed can we, make such an inquiry concerning the Unbecome? Of what comes from nowhere can it be reasonably asked "Whence comes it?" As commonly stated, the principle of sufficient reason demands that every being have its reason, if not *in se*, then *in alio*. Of this, however, what is the result? A has its reason in B, B in C, etc., P in Q, Q in R, etc., and so on for ever and ever, unless one of the later members be absolutely and in every respect identical with one of the earlier. Any mere partial identity would not suffice, as the principle of sufficient reason would demand the reason of this supposed difference. In the case of the principle of causation we reach the end of the series as soon as we come to an *Ens* bearing no trace of being an effect, but in the case of the principle of sufficient reason this is not so. Hence there is no sense in saying that the sufficient reason of a being is either *in* the being or outside of it. What we must say is that the Unbecome *is* its reason. But observe the consequence: A being must have a reason, otherwise it would not exist. Hence in the present case, where the reason is identical with the being, we must say that if the Unbecome were not, it would not exist. But surely was any proof at all necessary to establish so elementary a truism?

Supposing, however, that the Unbecome really has a reason, where must it be sought? According to some in its "aseity". What is an "*ens a se*"

The expression is certainly ungrammatical, and, seemingly, also quite meaningless. "*Caius a Titio*" as yet means nothing, nor does "*ens a se*" nor "*ens ab alio*"; they are elliptical and incomplete; the preposition "*a*," "*ab*," must denote a certain passivity, but without an explanatory verb we know not which. How, for instance, is the expression to be put in a positive form? "*Ens a se necatum*" gives "*Ens quod se ipsum necavit*," but "*ens a se*?" "*Ens quod se ipsum ???*" Evidently something is wanting. A theologian once proposed to Dr. Isenkrahe the use of the present participle of the verb "*sum*," i.e. "*ens a se ens*," but this scarcely meets the case as "*ab*," "*a*" requires a passive, whereas "*sum*" is no more passive than "*vivo*".

Others have it that the Perfection of the Unbecome is its reason. What is the Perfect? That to which nothing is wanting? If so, then Perfection is equivalent to plenitude. Within its own field nothing is superior to the Perfect and whatever lacks perfection is not perfect at all. If this is the case, is it at all possible to speak of "degrees of perfection," of the "more or less perfect," or, worst of all, of the "infinitely perfect"?¹

Most scholastics, however, according to Dr. Isenkrahe, prefer to seek the reason of the Unbecome in its absolute necessity. What does this absolute necessity mean? We are, of course, acquainted with many things necessary, for instance, for the support of life, for the satisfaction of some longing whether in our own selves or in others. When we speak of a thing being necessary the sentence is not yet complete; it is necessary to . . . for . . . because otherwise . . . etc. Now, in the present case, the "*Ens a se*" exists, because it is necessary, otherwise . . . What is the conclusion? Because otherwise it would not exist? But is this an explanation, and, moreover, does not this same conclusion hold in the case of every single being no matter how humble?

An explanation of the necessity of the "*Ens a se*" might be sought in the possible contradiction involved in the denial of such a being. But of what sort of contradiction are we to think? In the region of thought certain denials do involve a contradiction, for instance if I deny the existence of the unit I should be able to divide the number 100 into non-existent factors, which would be absurd; but such a purely ideal contradiction does not in the least explain the necessity of real existence. Let us take real things. Supposing I deny the existence of the Rhine, instantly I am contradicted by my experience, for I see the river frequently. If I deny my own existence or that of the outer world the result is the same. Finally, if I deny the existence of the Unbecome, I should (if I admit that *ex nihilo nihil fit*) be faced by the same contradiction, as I should be unable to explain the existence of anything at present. In all the three cases the necessity is exactly the same.

¹On the infinite and finite see Isenkrahe, "Über die Terminologie des Endlichen und Unendlichen," in "Natur und Offenbarung (vol. liv. pp. 129-156, 201-228) where he points out the ambiguity of the words, which are "explained" by others no less ambiguous, such as "term" and "limit," and, used, now in one sense now in another, first of extended things, then, metaphorically, of qualities, and, finally, of being itself. A thing which is believed to be endless is nevertheless finite ("*ens finitum*"). In the case of qualities, indeed, their intensity may be compared to quantitative extension, and, as both are capable of increase, both may be called "finite". But in the case of being itself ("*ens*"), is it capable of such increase? "*Ens, entius, entissimum*" sounds very much like nonsense.

There is, however, yet another kind of necessity. It may happen that the denial of a thing implies no contradiction in terms, and no direct contradiction with experience, and yet implies one in the undenied remainder. For instance the last-born of a family denies the existence of his father. If his father died before the child's birth there would be no direct contradiction with experience and yet there would be one in the undenied remainder, for how will our friend explain his own existence and that of his brothers and sisters? Or again, if I deny the existence of the moon, besides the direct contradiction with my experience, there would be a contradiction in the remainder, for how should I then explain the tides? But now, supposing I deny my own existence and that of every creature. Result: Contradiction with experience, but apparently none with the remainder. Finally, supposing I deny not only my own existence and that of every creature, but also that of the Unbecome. Again the result is a contradiction with experience, but quite certainly there is none with the remainder seeing that, *ex hypothesi*, nothing would remain. Hence for the denial of the Unbecome not to lead to a contradiction the existence of all must be denied, and this we cannot do without contradicting our experience. In this sense the Unbecome is necessary, but, here again, we must note that this same necessity, based on experience, belongs to every single being the existence of which we know by experience.

So far therefore we have found no necessity peculiar to the Unbecome. Nor do the manuals of scholastic philosophy enlighten us. They tell us for instance that metaphysical necessity implies the intrinsic impossibility of the contradictory, but they fail to tell us what "intrinsic impossibility" means. After all, a contradiction must be a contradiction with something; what is the something? Tongiorgi makes such impossibility to depend on the contradiction in terms involved by its opposite, but does this apply in the case of the Unbecome? Supposing I say: The Unbecome does not exist, is the statement self-contradictory? What contradiction is there between the denial of existence and the denial of becoming? O did not become and does not exist, where is the contradiction in terms?

Among the objections which Dr. Isenkrahe accumulates against this favourite proof of the schoolmen, a few seem to rest on a misunderstanding or on faulty definitions peculiar to the authors he is criticising. On page 18 the hypothetical abandonment "Ein Körper soll [von Gott] . . . belassen und nicht verändert werden" is, I fear, impossible from a scholastic standpoint, even as a hypothesis. On page 21 there seems to be a confusion of ideal with real space. On page 50 Dr. Isenkrahe argues that if the essence is "*id per quod ens est id quod est et non aliud*" then it cannot be multiplied. His objection here is, however, based on Stöckl's faulty definition which would apply rather to the principle of individuation than to the essence. Page 52: The essences which "postulate existence" are those existing in the Divine Intelligence. Page 53: When Tillman Pesch speaks of "*ratio*" as being equivalent to "*essentia*" he is thinking of the "*ratio essendi*" not of the "*ratio existentiae*". Page 54: It is rather dangerous to argue on the term "*principium*" as it so frequently stands, not for "principle," but for "beginning".

C. DESSOULAVY.

Die Philosophie von Richard Avenarius: Systematische Darstellung und immanente Kritik. Von Dr. phil. FRIEDRICH RAAB. Leipzig: Meiner, 1912. Pp. iv, 164.

It is a little curious that, especially in these days of "radical empiricism," more attention has not been given in our own country to the work of

Avenarius. For of all empiricists Avenarius, so far as he is true to his own presuppositions, is the most consciously and insistently radical. If his primary assumptions are granted, and the validity of his deductions from them established, there can be only one possible philosophy for mankind, a pure and absolute positivism which has got rid of everything in the way of ideal "construction," "interpretative hypotheses," "standards of valuation," and even of every vestige of the distinction between the psychical and the physical. The sole task of philosophy is to "comprehend" a "given" world, and by "comprehension" is meant not the understanding of the world as an ordered system, but merely the apprehension of such part of its content as may form "our" environment in accord with a general formula applicable to all acts of apprehension. Probably the chief reason why so elaborate and conscious an attempt to work out the implications of positivism is still so little known to English readers lies in the painful elaboration and unfamiliarity of the exceptionally hideous technical terminology devised by Avenarius out of a fear that the use of a less extraordinary vocabulary might involve associations which he was anxious to avoid. His monstrous new terms were intended, like the symbols of some new calculus, to derive the *whole* of their suggestive force from their formal definitions.

As an introduction to the study of the *Kritik der reinen Erfahrung*, Dr. Rasb's study merits high praise. The first or "expository" section is a model of succinctness, especially when the difficulties it has surmounted are borne in mind. The reader will there find the main positions of "empirio-criticism" arranged in a logical order, and with careful definition of the leading technical terms. The second, or critical, part is an excellent piece of work, though not at all easy reading. The critic's task is all through a double one. He asks (1) Whether Avenarius's conclusions are true to his presuppositions; (2) Whether the presuppositions themselves are truly philosophical. Avenarius is thus made to criticise himself in highly effective fashion. The result of the "immanent" criticism of the inner logic of the system is not, on the whole, unfavourable. It is found that, so long as we confine the work of the philosopher to the "comprehending" of the given, in Avenarius's sense of the phrase, the *Kritik der reinen Erfahrung* is fairly self-consistent in its analysis of the process of "comprehension," though there are developments which are not warranted unless we take into account not merely a theory of experience but a theory of knowledge in general. Empirio-criticism comes off worse on the second score. It is a false positivistic assumption that, even as cognitive, mind has no task beyond that of "comprehending" the "given" in the simplest and most convenient formulæ. Avenarius is driven by this assumption into the manifest fallacy of confusing judgments of value with judgments of fact. The consequence is that, if he is to be consistent, he can attach no real meaning to the term "truth". Since the proposition "this is true" is to be a statement of *fact*, not of value, it can only mean something like "this is what every man will some day actually believe". Thus before declaring *any* statement to be true, we might be called on to determine by the calculus of Probability the chances that the statement ever will be accepted by all men whatsoever. And, of course, the same considerations affect the principles of the calculus itself, and so on, *in infinitum*. Thus we see that Positivism systematically carried out as a theory of first principles destroys itself. The promised goal of an experience which is "pure," in the sense that it contains nothing but "the given" as "given" is an intellectual chaos. We must say therefore that the *Kritik der reinen Erfahrung* as a philosophical account of the process of understanding the world is a failure, thanks to the one-sided way in which it identifies "understanding" with

"comprehending in the most economical formula". But if we confine our attention to those natural sciences which do aim simply at concise and accurate description of a "given material," Avenarius has given a valuable and, in the main, consistent account of the steps by which their descriptive formulæ are reached.

A. E. T.

L'année Psychologique. Eighteenth Year. Published by Larguier des Bancels and Dr. Th. Simon. Paris: Masson et Cie, 1912. Pp. 525. Price 15 francs.

The volume opens with appreciative articles by Th. Simon on Binet and by Des Bancels on his work. A good photograph of Binet is reproduced. B. Bourdon. 'La perception des mouvements de nos membres.' [It is not definitely established that the sensitivity of the articular surfaces plays an essential part. Deep sensitivity is not excluded. The perception is not destroyed by luxation. We do perceive the movements of the tongue, larynx, soft palate. Theory of derivation from simple sensations of tension and pressure by association with veritable (visual) sensations of movement.] A. Imbert. 'Vitesses relatives des contractions musculaires volontaires et provoquées.' [If tracings are taken direct from an electrically stimulated muscle, the tangent of the angle made by the rise in the tracing, i.e., the height of the apex of trace upon the time taken to rise thus far, is constant. Voluntary contractions are not nearly so fast or so regular in their speed as involuntary.] Pierre Bovet. 'Les conditions de l'obligation de conscience.' [An interesting and stimulating attempt to found moral theory upon a purely psychological basis by a study of the part played in the consciousness of duty by the 'consigne' (instruction or determining tendency). Duty is the perception of a conflict of two tendencies of which one emanates from an 'instruction'. Habit alone does not form instructions, but collective custom does. Thereon is based not only the typical moral 'instruction,' but the special forms of taboo and of categorical imperative. The acceptance of an instruction from another person presupposes between him and the subject a 'rapport' of a special nature, of which love and fear are in varying amounts the constituents. That this 'rapport' is necessarily social is a gratuitous supposition.] P. Souriau. 'La délimitation de la psychologie.' [“Elle s'intéresse surtout aux résultats ultimes de cette évolution qui de la matière brute a fait sortir la vie et enfin la pensée. Plus elle s'approche de la pure activité mentale, plus elle se sent sur son terrain.”] Albert Leclère. 'La loi de préformation et de prédestination en psychologie.' [If psychology is to hold its place amongst the sciences, it must see that it is as deterministic as possible while remaining rigorously experimental. This determination is just the affirmation that there is nothing absolutely new in what seems the most novel; the astonishing is the complex and that is reducible to the simple which is familiar. The only novel or noteworthy thing in complexes is the moment when an otherwise familiar law begins to act upon the mass of routine elements which constitute the complex. Also discussion on the origin of ideas, the mechanism of emotion, the nature of the tendency, etc.] R. L. 'Etudes techniques sur l'art de la peinture.' 1. La peinture grasse. [For example, Velasquez and Corot at times, the landscapes of Henner, but especially Boulard and Guillaumet. The treatment of the lights, shadows, etc., in this class of work.] 2. English painting of the eighteenth century. P. Lapie. 'Avancés et retardés.' [A preliminary notice of experiments. Intellectual precocity is rather due to special inten-

sity of vigour of body and mind than to really superior intelligence.] O. Bertobag. 'Quelques réflexions méthodologiques à propos de l'échelle métrique de l'intelligence de Binet et Simon.' Goddard. 'Résultats obtenus en Amérique à Vineland, N.J.' [With B.S. tests.] Umberto Saffiotti. The B.-S. tests 'modifiées selon la méthode Trèves-Saffiotti'. [These three papers give the reader a general popular account of the work and criticism of their authors.] Dr. Sullivan. 'La mesure du développement intellectuel chez les jeunes délinquantes.' [Tentative work with the B.-S. tests carried out on inmates of Holloway Prison.] A. Giroud. 'La suggestibilité chez les enfants d'école de sept à douze ans.' [Preliminary experiments showing that suggestibility diminishes regularly with age. Method-series of stimuli, lines and weights of same size, of which the first five, say, are of increasing magnitude and the last ten or so equal: also verbal suggestions on names of colours.] A. Maeder. 'Sur le mouvement psychanalytique. Un point de vue nouveau en psychologie.' [General introduction to this subject in light of author's personal experience in interests of Latin races to whom the work is still rather unfamiliar.] Ed. Claparède. 'La question du sommeil.' [Discussion of criticisms and confirmations of his theory of sleep as an instinct, with an appendix on dreaming as the bait for, as well as, according to Freud, the guardian of sleep.] Three surveys of recent literature: Th. Ruyssen. 'Le problème de la personnalité dans la psychologie religieuse.' Georges Bohn. 'Les progrès récents de la psychologie comparée (1906-1911).' [Chief interest towards physico-chemical researches.] Aug. Ley. 'Les enfants anormaux.' Pierre Bovet. 'Un institut de pédagogie expérimentale. Institut J. J. Rousseau.' [Opened in Geneva in 1912.]

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VIII.—PHILOSOPHICAL PERIODICALS.

BRITISH JOURNAL OF PSYCHOLOGY. Vol. v., Part 2. **Edward Bullough.** 'Psychical Distance as a Factor in Art and an Ästhetic Principle.' [Psychical Distance (distinguished from spatial distance of a work of art or temporal distance of events represented) involves the assumption of an objective attitude towards the æsthetic phenomenon, our practical impulses being inhibited. Distance primarily gives dramatic action its unreality, rather than *vice versa*, for given distance "all the (real) world" may appear as a "stage". The artist must adopt the distance attitude, or he cannot treat his own experience artistically. Under-distancing is the common failure of the subject; an excess of distance a failing of art, producing impression of artificiality. Both actual spatial distance and temporal distance are a help to psychical distance, and these are impossible in the case of the lower senses. This conception of distance is applied to the distinction between the sensual and the spiritual, and also to the anti-thesis individualistic and "typical"; it is further suggested as affording a criterion between the beautiful and the merely agreeable, the latter being a non-distanced pleasure. The man *qua* artist is distanced from his ordinary self so that the theory of art as self-expression is misleading.]

E. M. Smith. 'Some Observations Concerning Colour Vision in Dogs.' [A record of a prolonged series of experiments too full of detail to analyse adequately. The method of reward and punishment was used at first, but subsequently the punishments (electric shocks) were abandoned as causing either too much effect (and producing great fear) or no effect at all. Colour preference experiments indicated preference for the darker colours, red and blue before yellow and green, red especially causing eager positive reactions. By an "approximate brightness-value series" of experiments, green and yellow were shown to be almost as bright as white for the dog J, the most satisfactory subject. No grey was confused with any colour by J. Practice resulted in considerable improvement of colour discrimination, but very slight improvement of brightness discrimination; further prolongation of experiments resulted in loss of interest and worse discrimination. Colour threshold apparently very high, but here again there is great improvement with practice. Some evidence of "transference of improvement," and of very striking retentiveness of training effects, even after ten weeks. Training effect tends to give way under fatigue, to original preference for red. Evidence given of deliberate comparison. Formation of discrimination habit specially difficult when it involved rejection of an initially preferred colour. "Position error" also caused considerable difficulty. Author concludes (1) that sense and memory of position are of far greater importance and significance to dogs than sensations received from light stimuli; (2) that discrimination of brightness is more fundamental than discrimination of colour, which is at the best unstable, and only effective when the animal has learned to neglect the sense of position and mere differences of brightness. It is suggested that differences between individual animals and between various breeds

may account for divergence of results gained by different investigators.] **Godfrey H. Thomson.** 'A Comparison of Psychophysical Methods. [Methods of Right and Wrong Cases, of Minimal Changes, and of Serial Groups applied in experimental investigation of the cutaneous spatial threshold. New Method of Non-consecutive Groups also used. Such Methods of Experimenting distinguished from Processes of Calculation after data have been collected : comparisons of Limiting and Group Processes and of Limiting and Constant Processes. Discussion of mathematical theory underlying the Method of Serial Groups, and of means of comparing the probable error of the three methods. In experiments devised to afford means of comparison between Methods of Right and Wrong Cases, and of Minimal Changes, two out of six subjects were aware of the different methods in use. The thresholds of these "informed" subjects were higher when the Method of Right and Wrong Cases was used than when the Minimal Method was used ; for uninformed subjects the tendency was the opposite to this. Improved method of totalling in the Constant Process suggested. Demonstration of changes of the threshold during a sitting, practice lowering the threshold, though after about fifty judgments the threshold was raised again, apparently owing to fatigue. Very close attention on the part of the subject seems to increase the variation of the threshold. Author concludes in favour of Group Methods, but suggests a lowering of the usual arbitrary demand for 80 per cent. right judgments.]

PHILOSOPHICAL REVIEW. Vol. xxi., No. 6. **F. J. E. Woodbridge.** 'Consciousness and Object.' [Reply to Thilly. "The object figuring in a conscious perceptual situation differs from the object out of it in the possession of consciousness." This is self-evident : but the distinction between consciousness and object can be defined only in a situation where that distinction exists ; and if the distinction is defined, it is that distinction and no other,—if I distinguish between objects and consciousness, the objects are not the consciousness. "Consciousness looks on ; there is nothing else left for it to do." Consciousness does not even look on ; it is not impotent, but non-potent ; and that determination raises the question of its nature.] **C. L. Franklin.** 'Implication and Existence in Logic.' [Against Russell. The phrase ' p implies q ' is poorly chosen to represent the manifold relations of logic, first because it derives a conclusion from a single premiss. Moreover, the symmetrical forms of speech are alone safe if one is to avoid the danger of wrong conversion. The 'necessary and sufficient condition' of the mathematician should become current in philosophy under the better title of 'sufficient and indispensable'. Again, Russell's phrase, which is universal, ignores particular propositions, and is thus one-sided. Lastly, the phrase fatally obscures the existence of the existence-term ; in fact, the concepts 'existent things' and 'non-existent things' are already existent in every statement that can be made, and are not confined to the existential proposition. These criticisms are illustrated by reference to Marvin's paper on The Existential Proposition ; and the article ends with a plea for the philosophical use of an elementary and sane symbolic logic.] **M. W. Calkins.** 'Henri Bergson : Personalist.' [Bergson is primarily a personalist, an idealist of the renaissant spiritualistic school. In his doctrine of self and its environment the idealistic character of his teaching is obvious. In his doctrine of nature, of the universe in its totality, the personalistic interpretation finds a difficulty in the concept of 'matter'. Yet on the whole his view of nature is allied to that of Leibniz, Fechner, Ward ; he is a pluralistic personalist. It is an error,

both in Bergson himself and in his critics, to stress the ultimateness of change and freedom in his system, and to neglect the enduring, willing, developing self.] *Reviews of Books. Notices of New Books. Summaries of Articles. Notes.*—Vol. xxii., No. 1. **R. Eucken.** ‘Knowledge and Life.’ Foreword to *Erkennen und Leben*; critique of pragmatism and biologism. The task of thought is to free the course of spiritual activity from external facts, and to expand and develop it into an independent world. In performing this office, thought passes through the stages of criticism, creation and work.] **E. L. Schaub.** ‘Hegel’s Criticisms of Fichte’s Subjectivism.—II.’ [The criticisms are substantially valid; for Fichte never saw clearly the inseparability of ideal and real, universal and particular, or that the fundamental philosophical principle must be a concrete unity expressing the synthesis of ego and non-ego, subject and object.] **W. Fite.** ‘The Man of Power; a Reply to Professor Rogers.’ [For individualism the sole basis of obligation is a mutual understanding, which as such is held to imply a contract. Obligation therefore lies upon the rich and powerful, if and so far as they are intelligent. Discussion.] **M. W. Calkins.** ‘Unjustified Claims for Neo Realism.’ [The neo-realist wrongly postulates a positive body of scientific doctrine; dogmatically dismisses the egocentric predicament; and appeals to common sense as only the naïve realist may.] *Reviews of Books. Notices of New Books. Summaries of Articles. Notes.*

PSYCHOLOGICAL REVIEW. Vol. xix., No. 6. **K. Dunlap.** ‘The Nature of Perceived Relations.’ [We may distinguish six theories of the nature of perceived relations. The first five—the sensational theory (Condillac in Brown); the scholastic theory (Maher, Angell); the representative theory (having its root in Descartes); the kinesthesia theory (Titchener); and the theory of relational states of consciousness (Brown, Spencer, James)—must all be rejected. There remains the theory of relational elements in content, or the empirical theory of relations, which holds that real relations of real objects are really perceived; that the elementary *percepta* (sensibles, relations, feelables) are not parts or functions of a perceiving ego, or conscious means of perceiving something else; that there is no difference in consciousness corresponding to the three kinds of elementary contents; and that, probably, no element of content is ever perceived alone.] **E. K. Strong.** ‘The Effect of Length of Series upon Recognition Memory.’ [Experiments with successively exposed advertisements. The percentage of correct recognitions decreases, and that of incorrect increases, as the length of the series increases; few incorrect recognitions, however, are made; the ability to know that we have not seen is more strongly fixed than the ability to pick out what we have seen. Recognitions not attended by a feeling of absolute certainty are practically no better than random guesses. A true measure of recognition-memory must take account not only of the percentage of correct recognitions, but also of the relationship between correct and incorrect (mistaken) recognitions.] **G. Rand.** ‘The Effect of Changes in the General Illumination of the Retina upon the Sensitivity to Colour.’ [Quantitative study of the influence of changed illumination on the induction of brightness by the surrounding field (effects upon limits of colour-sensitivity, and upon colour-limens at different degrees of eccentricity). The influence is very marked, especially when the stimulus is surrounded by a white field; it cannot be eliminated even by the use of a campimeter-screen of the brightness of the colour, unless the general illumination of the room be held constant. Change of illumination also influences the action of the pre-exposure on the limens and limits of colour;]

quantitative work upon this point is promised. It follows from the experiments that illumination must be standardised if observations of any of the brightness-factors influencing colour-sensitivity are to be comparable.] **H. A. Peterson.** 'Note on a Retrial of Professor James's Experiment on Memory Training.' [See *Principles*, i., 666 ff. The net gain for the two observers amounted to 6·2 and 55·9 per cent. No lasting improvement was made in the training. The transfer of training, shown by the percentages, is ascribed to increased practice in the methods of verbatim memorising commonly considered by psychologists to be the best.] Vol. xx., No. 1. **R. Dodge.** 'Mental Work: A Study in Psychodynamics.' [Relative pulse-rate gives a real if a crude psychodynamic measure. With initial relaxation, the experimental introduction of muscular or mental activity invariably increases frequency of pulse. Instruments and experiments (records taken during college examinations) are described, and curves figured.] **I. R. Rosanoff and A. J. Rosanoff.** 'A Study of Association in Children.' [All characteristics in which the test-records of children differ from those of adults are practically obliterated at eleven years of age. Many test-records, typical and atypical, are printed in full.] Vol. xx., No. 2. **E. L. Thorndike.** 'Ideo-motor Action.' [Polemical, partly based on questionnaire returns, against the theory of ideo-motor action, which is regarded as a survival of imitative magic. The idea has no dynamic potency, save that its physiological parallel evokes the response bound to it by inherited connexions or by the law of habit.] **S. I. Franz.** 'The Accuracy of Localisation of Touch Stimuli on Different Bodily Segments.' [Accuracy is greater with light than with heavier stimuli; it varies at different parts of the body; the average error is less than the two-point limen; no practice effects were found; occasionally wrong localisations, akin to dyschiria, were observed.] **R. Pintner.** 'Inner Speech during Silent Reading.' [Silent articulation is a habit only; practice makes reading without it as good as the ordinary reading with it; practice in reading without it aids ordinary reading, probably by shortening the habitual process.] **K. Dunlap.** 'Obtaining the Mean Variation with the Aid of a Calculating Machine.' **J. B. Watson.** 'Psychology as the Behaviourist Views It.' [Human psychology, structural and functional, has failed to make good its claim as a natural science. Psychology may now dispense with consciousness (save as a tool used by all sciences) and apply itself objectively to the study of animal and human behaviour; its findings thus become the functional correlates of structure, and lend themselves to explanation in physico-chemical terms. All the essential problems of current introspective psychology will thus find their solution.] **J. R. Angell.** 'A Protest.

AMERICAN JOURNAL OF PSYCHOLOGY. Vol. xxiv., No. 3. **C. A. Ruckmich.** 'The Rôle of Kinesthesia in the Perception of Rhythm.' [Kinesthesia is essential to the establishment of a perception of rhythm; thereafter rhythm may be consciously carried, without kinesthesia, by auditory or visual processes.] **P. Smith.** 'Luther's Early Development in the Light of Psycho-analysis.' [Traces Luther's early suffering to an infantile sex-complex (obsession by the devil, idea of concupiscence). The 'sublimation' was effected largely by external causes (first call to Wittenberg, 1508).] **C. E. Ferree.** 'The Fluctuation of Liminal Visual Stimuli of Point Area.' [Involuntary changes of accommodation are not essential; the phenomena bear out the writer's theory of adaptation and recovery as do the fluctuations of stimuli of larger area. Simultaneous induction is only a minor factor in adaptation.] **E. P. Frost.** 'The

Characteristic Form Assumed by Dreams. [Rhythms of an explosive kind occur; a residuum of energy from one phase releases energy for a succeeding phase. Each phase contributes an increment of energy to the vasomotor centres, where there is summation followed by discharge.] **M. E. Haggerty and E. J. Kempf.** 'Suppression and Substitution as a Factor in Sex Differences.' [Tests which appear to show that women have a more pronounced tendency than men to protect themselves against embarrassment.] **M. E. Donovan and E. L. Thorndike.** 'Improvement in a Practice Experiment under School Conditions.' [Boys of the greatest initial ability in adding show equal or greater gross gain as compared with boys of the least initial ability, *i.e.* individual differences persist.] Discussion. **E. B. Titchener.** 'The Method of Examination.' [The Würzburg method possesses exploratory, critical and educational value; but the psychology of the higher processes must come from social psychology, and from a method of the type of Ach's systematic experimental introspection.] **Prof. Yuzero Motora.** Fifth Report of the Polish Psychological Society. **S. W. Fernberger.** 'Convention of Experimental Psychologists.' Book Reviews. Book Notes.

JOURNAL OF PHILOSOPHY, PSYCHOLOGY AND SCIENTIFIC METHODS. x., 2.
A. O. Lovejoy. 'On some Novelties of the New Realism.' [An able criticism of E. B. McGilvary's attempts to explain the metaphysical status of hallucinations, dreams, colour-blindness, and extinct objects on new realist lines, concluding that "the clear implications of conceded facts appear to render a realistic epistemological monism inadmissible".] **C. I. Lewis.** 'Realism and Subjectivism.' [Disputes the inferences which 'new realism' seeks to draw from the ego-centric predicament, and shows that it proves nothing either way. But the writer should grasp that to 'hypothecate' means to mortgage (*cf.* p. 45).] **C. Ladd-Franklin.** 'The Antilogism: An Emendation.'—x., 3. **G. S. Fullerton.** 'Percept and Object in Common Sense and in Philosophy.'—I. [A criticism of 'new realism' from the standpoint of a pragmatic realism. "Common sense accepts percept and object as two," and tacitly admits that "we can see things only as they appear to us". Yet it is not inconvenienced, any more than science, by the 'ego-centric predicament,' and always holds that it perceives objects and the things themselves and not copies. It also distinguishes between changes in percepts and in objects. All this is important, for what would happen to men "if they had been unable, in practice, to distinguish between percept and object, and to know when a change in their experience indicated a change" in the object and when not.] **K. Schmidt.** 'Studies in the Structure of Systems.—iv. The Generating Problem.' [The fight for postulates and against axioms is a fight for freedom in mathematics and science." . . . "By surrendering the idea of self-evidence as a necessary requirement" mathematics have brought to light "the real logical requirements which a deductive system should satisfy"; "for only if many accounts are possible can there be selection". The postulates selected are determined by the generating problem, for "the postulates of a system are the conditions which make the solution of the problem possible". Thus they are "not arbitrary or mere conventions," but "necessary" for the solution. The generating problem also determines what is 'essential' and the 'same' system has different 'essential' properties according to the particular generating problem. The 'realm' of the system is determined similarly and it and its 'truth' do not extend indefinitely far. Hence the importance of the "separation of generating problems".]—x., 4. **B. H. Bode.** 'The Method of Introspection.'

[“The analysis of ‘mental states’ as such is as impossible as it is unmeaning.” “Clearness and obscurity can be construed only with reference to some specific purpose.”] Contains also Reports on the Annual Meetings of the American Philosophical Association (J. B. Pratt) and of the American Psychological Association (W. S. Monroe) in the Presidential Address of which Prof. E. L. Thorndike denied the existence of ideo-motor action.—x., 5. **H. A. Overstreet.** ‘Philosophy and Our Legal Situation.’ [Points out that the doctrine of natural rights, entrenched in the American Constitution, and interpreted by the lawyers in an individualist way, forms a great obstacle to social legislation for the protection of workmen against capitalists.] **H. C. Stevens.** ‘A Peculiar Collective Illusion.’ [After a day in a motor-boat two out of three persons who slept in a tent awoke simultaneously during the night with an illusion that their tent was floating on the water.]—x., 6. **E. A. Singer.** ‘Man and Fellow-Man.’ [Argues against Dewey and the absolutists alike that a solipsist *could* arrive at truth by himself if he were granted a succession of experiences and allowed to change his mind, so that he could go on indefinitely correcting his points of view.] **G. S. Fullerton.** ‘Percept and Object in Common Sense and in Philosophy.—II. The Common-Sense Doctrine and the Philosopher.’ [The latter always starts from the former and exaggerates one aspect of it. Also he does not improve his doctrine but only restricts his audience by using technicalities. “The concrete is the touchstone of abstract theory.”] **F. Krueger.** ‘Consonance and Dissonance.’ [Criticises Stumpf’s Theory.]—x., 7. **J. E. Boodin.** ‘Individual and Social Minds.’ [Argues that if the soul be conceived as a field of energy, both may be conceived as continuous.] **W. B. Pillsbury.** ‘Fluctuations of Attention and the Refractory Period.’ [Describes observations of certain short pulses of attention coming every 0·2 second or so, fairly constant for all conditions, and uninfluenced by voluntary effort or desire. The inference drawn is that “the apparent continuity of a conscious state is due to the rapidity with which these pulses succeed each other.”] **G. P. Adams.** ‘Everybody’s World and the Will to Believe.’ [Criticises it as inconsistent in Prof. G. S. Fullerton to insist that the common-sense world is the only real world, and yet at the end to allow the social phenomenon of the Will to Believe to suggest the existence of another and a better World.]—x., 8. **M. R. Cohen.** ‘The New Realism.’ [A full and sympathetic review of the book of that name.] **A. O. Lovejoy.** ‘Secondary Qualities and Subjectivity.’ [Disputes an assertion of M. R. Cohen’s that no science actually treats secondary qualities as subjective.]—x., 9. **M. R. Cohen.** ‘Jurisprudence as a Philosophical Discipline.’ [A (very general) plea for enriching philosophy by a study of law.] **B. H. Bode.** ‘The Definition of Consciousness.’ [Rejects James’s theory which identifies consciousness with objects in a certain setting, but derives it from his ‘margin’ or ‘fringe’]. “To recognise that an object existed prior to our experience is to deal with the meaning of things, a meaning to be construed in terms of the fringe on the one hand and of bodily control on the other.”] **C. I. Lewis.** ‘Interesting Theorems in Symbolic Logic.’ [Argues that there is a divergence of meaning between ‘implies’ in the algebra of logic and in valid inference, which has the consequence that “not only does the calculus of implication contain false theorems, but all its theorems are not proved”. Evidently a fundamental criticism to which an answer should be forthcoming.]

REVUE DE PHILOSOPHIE. 1^{er} Aout, 1913. **J. Maritain.** ‘Intuition in the Sense of Instinctive Knowledge or Inclination.’ [Against M. Bergson. Never shall we find in ourselves a faculty superior to intelli-

gence, the exercise of which however is conditioned on our other faculties.] **J. Ferrand.** 'Theosophy, Its Past, Present, and Future.' [Lives of Mme. Blavatsky and Mrs. Annie Besant. Theosophy counts 100,000 adherents, divided into 520 Centres. Doctrines and organisation. A new Messiah.] **A. Veronnet.** 'Cosmogonic Hypotheses.' [Kant on the Origin of Comets, on the Milky Way, on the Continual Formation of Worlds, on the Plurality of Worlds.] **F. Pradel.** 'The Method of Immanence.' [M. Blondel's reply to criticisms of P. de Tonquédec in this Review for March last. Are we to act on faith before we have it?] **J. Le Rohellec.** 'Eight New Manuals of Philosophy.'

ARCHIVES DE PSYCHOLOGIE. Tome xii., No. 4. **V. Henri et J. L. des Bancels.** 'Sur l'interprétation des lois de Weber et de Jost : recherches sur les réactions des cyclops exposés à la lumière ultra-violette.' [The time of motor reaction varies with the intensity of stimulus in a way that suggests Weber's Law; this Law is therefore a matter of the sensory periphery, and not of central processes. The linen obtained with intermittent stimuli is, within certain limits, less than the normal limen; Jost's Law of distribution in time may, then, be a matter of physiological induction.] **M. de Maday-Hentzelt.** 'Réflexions sur l'amour maternel : problèmes et méthodes.' [Maternal love has three sources: organic, symbiotic, social. The organic phase is a sort of fever, which finds alleviation in nesting, brooding, etc. The symbiotic phase involves sympathy, and shows emphatic or imitative response to the stimuli from the brood. The social phase is bound up with the common family life, and with the family and social value of the child.] **P. Menzerath.** 'Contribution à la psychoanalyse.' [Notes on a case of *dementia praecox*. The associative series may introduce the complex *a posteriori*, and the experimenter is liable to be deceived. The method of recollection brings out a complex-constellation and lays a lighter burden of interpretation on the experimenter.] Recueil de Faits : Documents et Discussions. **E. Pittard.** 'Un cas de magie sympathique.' [Describes a hunting-charm (concretion from the bird's stomach) used by the Patagonians and Araucanians in the pursuit of the *Rhea*.] Bibliographie. Notes diverses. Tome xiii., No. 1. **J. Froment et O. Monod.** 'Du langage articulé chez l'homme normal et chez l'aphasique.' [Denies the existence of verbal-motor (articulatory) imagery: the phenomena of motor aphasia can be explained by defect of verbal-auditory images.] **A. Descœudres.** 'Les enfants anormaux sont-ils amoraux?' [Observations on backward and defective children prove that they are not deficient morally.] **H. Flounoy.** 'Epilepsie émotionnelle.' [Report of case; observation and diagnosis. There is an emotional epilepsy whose attacks and crises are of the nature of defensive reactions.] **E. Claparède.** 'Existe-t-il des images verbo-motrices?' [Maintains the existence of verbal-motor images (which may be independent of the verbal-visual and verbal-auditory) and of an autonomous verbal-motor memory.] Recueil de Faits : Documents et Discussions. **W. Deonna.** 'A propos d'"un cas de magie sympathique".' [The Patagonian talisman described by Pittard may be thought to give power in the chase, or to endow its possessor with the qualities of the original host, or to bring luck at large; data, as so often, are wanting.] Bibliographie.

ZEITSCHRIFT F. PSYCHOLOGIE. Bd. lxiii., Heft 1 und 2. **H. Liepmann.** 'Zur Lokalisation der Hirnfunktionen mit besonderer Berücksichtigung der Beteiligung der beiden Hemisphären an den Gedächtnisleistungen.' [There are three sorts of localisation: regional, as of vision in the

occipital lobes; structural, as perhaps of the spatial moment in perception; and diffuse or distributed, as of any 'real' experience. These must not be confused, nor must the restricted definitions of the physiologists be neglected, when the psychologist is using their results for his own science. The meagre qualifications of the right hemisphere for maintaining the act of speech are but an instance of its general disability for the free recall of movements by memory; this disability itself awaits explanation.] **J. O. Vertes.** 'Das Wortgedächtnis in Schulkindesalter.' [An elaborate study of the immediate verbal memory of school children (groups of fifty-eight and seventy; experiments by seven trained workers in ten classes of six schools; ages six to thirteen), by Ranschburg's method of paired words, which admits of the evaluation of right and corrected reproductions, of failures, and of the time of reproduction. We give a few results. The range of immediate memory, under the conditions, was slightly over 80 per cent. The average time of right reproduction is 2 seconds. We may argue from short time to wide range, but at most in 80 per cent. of the cases from wide range to short time. If we combine range and time into a single formula (Ranschburg), and speak henceforth simply of memory, we find that memory improves as the classes advance. Boys improve with age, both in span of memory and in time of reproduction; girls show a falling off, in both respects, in the years ten to eleven. Memory shows a complete parallelism with general school progress; is on the whole better in girls than in boys; and is better in children of comfortable circumstances than in the poor. The best criterion of memory, in the present meaning of the word, is the time of reproduction. The number of perseverations is proportional to the difficulty of the task. Many other matters of interest (the paper fills 110 pages) must here be passed over.] **Literaturbericht.** **O. Kraus.** 'Berichtigung.' **J. Friedrich.** 'Zu vorstehender Berichtigung.' [Apropos of a review of *Das Recht zu strafen*.]

IX.—NOTES AND CORRESPONDENCE.

IN my notice of Prof. Billia's book, *L'Esiglio di Sant' Agostino*, in the July Number of MIND, I attributed to him views similar to those of Rosmini on the relation of Church and State, and made use of the terms a 'Universal Church,' a 'Church of the State, but with less priesthood and ceremonial, and greater liberty both of thought and of action'. Prof. Billia writes that he is, and has always been, opposed to such a conception as a State Church, and to any domination of the State over intellect and conscience. My words were based on his tenth chapter ("on Christian Philosophy"). They do not, however, bear the construction which he puts upon them, but were used in a quite general sense. "Church of the State" does not imply,—as it may well do, in Italian, for obvious historical reasons,—a "*Religion of the State*," with consequent raising of heresy into a crime against the State, civil disabilities of dissenters, etc. I hope, therefore, my phrase may not, as he fears, cause misunderstanding, in his own country, of Prof. Billia's views.

J. L. MCINTYRE.



V

P

MSS. and other Communications for the Editor, except those from America, should be addressed to Professor G. F. STOUT, The University, St. Andrews. All American Communications should be addressed to Professor E. B. TITCHENER, Cornell University, Ithaca, N.Y.
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OCTOBER 1913.

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